

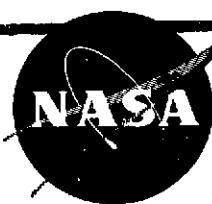
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**TIROS VII
RADIATION DATA CATALOG
AND
USERS' MANUAL**

Volume 3

(March 1, 1964 - September 30, 1964)



**GODDARD SPACE FLIGHT CENTER
GREENBELT, MARYLAND**

**TIROS VII
RADIATION DATA CATALOG
AND
USERS' MANUAL**

VOLUME 3

MARCH 1, 1964 – SEPTEMBER 30, 1964

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FOREWORD

The quantity of radiation data acquired from TIROS VII over a two year useful lifetime exceeds several times over the total quantity acquired from any other previous TIROS radiation experiments. As a result, the TIROS VII Catalog-Manual is being published in four volumes. Each volume of this series contains time-dependent information for the specific time period covered by the volume concerning radiometer response patterns, possible corrections for instrumental degradation, the Index of Final Meteorological Radiation Tapes, and Subpoint Track Summaries. This, the third volume, covers the time period March 1, 1964 to September 30, 1964, and also contains separate asymmetrical degradation corrections for the wall and floor sensors for channels 1 and 2, and degradation corrections for channels 3 and 5. The last volume of this series will contain information about the time period October 1, 1964 to June 19, 1965. The first volume of this Catalog-Manual contains general discussions about the nature of the experiment, the calibration, and the processing, coverage and documentation of the data, in addition to specific information concerning the period from launch on June 19, 1963 to September 30, 1963.

Many members of the Laboratory for Atmospheric and Biological Sciences (formerly the Aeronomy and Meteorology Division) contributed to the success of the TIROS VII medium resolution radiometer experiment.

The task of obtaining and assembling the information contained in this manual into written form suitable for publication was largely accomplished by the following persons:

Mrs. Musa Pasternak, Editor
Mr. W. R. Bandeen
Mr. Virgil Kunde
Mr. George Nicholas
Mrs. Ingrid Strange
Mr. Frederick Woolfall

The efforts of these individuals are hereby acknowledged.

The preparation of the material presented in Appendix B was accomplished mainly through the effort of Mr. Anthony Maturevitz.

It should be noted that the channel 1 (15 micron data) degradation corrections given in this volume supersede those given in Volumes 1 and 2.

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LIST OF COMMON SYMBOLS

A general List of Common Symbols is found in Volume 1. Only the symbols not in Volume 1 and unique to Volume 3 are listed here.

C	Symmetrical degradation constant for both floor and wall sides of a radiometer channel.
C^F	Degradation constant for the floor side.
C^W	Degradation constant for the wall side.
M	Difference $T_{SFC} - T'_{BB(SFC)}$.
$T'_{BB(SFC)}$	Measured equivalent blackbody temperature by the 8-12 micron channel whose response may be degraded, adjusted for atmospheric absorption to infer a surface radiative temperature.
T_{SFC}	Sea surface temperature taken from a World Atlas.

δT_{BB}	Thermal channel temperature correction resulting from instrumental degradation. It may be thought of as the sum of a "symmetric component," δT_{BB}^{sym} and an "asymmetrical component," δT_{BB}^{asy} (cf. Equation 34).
ΔT_{BB}	Difference between floor and wall equivalent blackbody temperature measurements of the same or equivalent targets by a radiometer channel whose response may be asymmetrically degraded.
<i>F</i>	"Floor" referring to measurements made while viewing in the floor direction or to parameters otherwise pertaining to the floor side of the radiometer.
<i>S</i>	"Satellite" referring to the assumption that all radiometer components exist at a common satellite interior temperature (i.e., T_c).
<i>W</i>	"Wall" referring to measurements made while viewing in the wall direction or to parameters otherwise pertaining to the wall side of the radiometer.

I. INTRODUCTION

This volume contains time-dependent information for the period March 1, 1964-September 30, 1964 concerning radiometer response patterns, the Index of Final Meteorological Radiation Tapes, and Subpoint Track Summaries. This volume also contains some new results of data degradation studies, a discussion of asymmetrical optical degradation, and possible corrections for instrumental degradation, including revised corrections for channel 1 (15 micron data) for the period from launch to September 30, 1964. General discussions of the experiment, the calibration of the radiometer, and the processing, coverage, and documentation of the data are found in Volume 1.

VI. PRE-LAUNCH AND POST-LAUNCH PERFORMANCE OF THE RADIATION EXPERIMENT

6.2 Post-Launch Behavior of the Experiment

In preparing this volume additional studies were carried out concerning the problem of "asymmetrical optical degradation" (AOD), which results from an imbalance between the separate floor and wall paths of the radiometer optics. A detailed discussion of the instrumental degradation problem, including AOD, is given in the *TIROS III Radiation Data Users' Manual Supplement-Correction Models for Instrumental Response Degradation⁴⁷* and generally will not be repeated here. However, certain specific points from Reference 47 will be repeated and elaborated upon below when necessary for the sake of clarity in the present discussion.

It has been noticed in several types of analyses that separate measurements of the same target intensities made through the floor and wall sides of the radiometer yielded significantly different results. Generally, when the phenomenon occurred, the "floor" measurements were higher than the "wall" measurements of the same target, and the differences between the two, $\Delta T_{BB} = [T'_{RB}^{(F)}$

$- T'_{BB}^{(W)}]$, increased with decreasing target intensity (cf. Figures 85 and 86). The simplified model discussed in Reference 47 predicts a rise in the space-viewed level of the telemetered analog signal with accompanying "negative-going" pulses whenever AOD occurs in the thermal channels. In every thermal channel of TIROS VII (i.e., channels 1, 2, and 4) these characteristics did appear in the analog signals, but always after the existence of some amount of asymmetry had been detected by other means. The failure to detect these characteristics earlier can probably be attributed partly to the difficulty of detecting a space-viewed level rise of several tenths of a c.p.s. in a noise background having an amplitude several times larger and partly to shortcomings in the highly simplified model.

One type of analysis indicating the occurrence of AOD involved separate floor and wall quasi-global averages of thermal channel data obtained from a computer program. The differences between least squares quadratic fits of the floor and wall quasi-global averages gave an indication of the magnitude of the floor-wall difference $\Delta T_{BB(\text{ave})}$ for the average quasi-global value of T_{BB}^i (cf. Figures 83 and 84).

Another indication of the occurrence of AOD involved comparing floor and wall measurements over the same region made within minutes of each other while the radiometer was scanning in the alternating open mode (cf. Figure B1, Volume 1). Analyses of this type were carried out utilizing both computer-produced grid print maps and hand plots from analog records.

A third indication of the occurrence of AOD was the gradual increase with time of the average floor-wall measurement differences for channels 1, 2 and 4 in the equatorial zone between 10°N and 10°S where the average temperatures are assumed to be relatively constant. Although AOD eventually became very pronounced in the channel 4 data, a detailed discussion of that channel is not given in this volume. Due to the general history of aberrant behavior in the channel 4 data, it was not felt that any significant

improvement could be effected over the discussions in Volumes 1 and 2 prior to Day 249, after which the data were considered to be unreliable for several reasons (cf. Section 6.2.3 of Volume 2).

Reference 47 gives the equation according to a simplified model of calculating \bar{W}' , the value of effective radiant emittance of a viewed target which the radiometer sensor would actually measure in terms of the original calibration (repeating equation 7.11 from Reference 47), as

$$\bar{W}' = | C^F \bar{W}^F - C^W \bar{W}^W + (C^W - C^F) \bar{W}^S | \quad (23)$$

[Equation (22) is found in Volume 1]

where C^F and C^W are degradation constants for the floor and wall sides respectively, \bar{W}^F and \bar{W}^W are the effective radiant emittances to which an undegraded sensor would respond when viewing through the floor and wall sides respectively, and \bar{W}^S is the undegraded effective radiant emittance corresponding to the radiometer housing temperature, T_c .

One general condition and two more conditions pertaining to the nature of the data can be used to simplify Equation (23). First, when in orbit, at least one side of the radiometer is always viewing space, which serves as a zero reference (i.e., when viewing the Earth through the floor, $\bar{W}^W = 0$, and vice versa). Second, it has been determined from analyses of analog records that the expression $(C^W - C^F) \geq 0$ holds for all discussions in this Volume. Third, when the extent of AOD is small (i.e., when the difference $C^W - C^F$ is small) the condition

$$C^W \bar{W}^W > (C^W - C^F) \bar{W}^S \quad (24)$$

will be satisfied for all reasonably expected values of \bar{W}^W . Applying these conditions, the absolute value bars can be discarded from Equation (23), yielding

$$\bar{W}'^F = C^F \bar{W}^F + (C^W - C^F) \bar{W}^S \quad (25)$$

$$\bar{W}'^W = C^W \bar{W}^W - (C^W - C^F) \bar{W}^S \quad (26)$$

for the floor and wall separately. A fourth set of conditions is now invoked for the ap-

plication of Equations (25) and (26), viz., we assume that quasi-global averages are related in the same way as individual measurements and that the distribution of floor and wall measurements is such that $\bar{W}'_{ave} = \bar{W}^W_{ave} = \bar{W}_{ave}$ and $\bar{W}'^F_{ave} + \bar{W}'^W_{ave} = 2 \bar{W}'_{ave}$. Applying these conditions and adding Equations (25) and (26) we have

$$C^W + C^F = \frac{\bar{W}'^F_{ave} + \bar{W}'^W_{ave}}{\bar{W}_{ave}} = \frac{2 \bar{W}'_{ave}}{\bar{W}_{ave}} \quad (27)$$

and subtracting Equation (25) from (26) we have

$$C^W - C^F = \frac{\bar{W}'^F_{ave} - \bar{W}'^W_{ave}}{2 \bar{W}^S - \bar{W}_{ave}} \quad (28)$$

Solving Equation (25) for \bar{W}'^F , it follows that the incremental effective radiant emittance which must be added to a floor measurement \bar{W}'^F to correct it for degradation is given by

$$[\bar{W}^F - \bar{W}'^F] = \left[\frac{1 - C^F}{C^F} \right] \bar{W}'^F - \left[\frac{C^W - C^F}{C^F} \right] \bar{W}^S \quad (29)$$

Similarly, from Equation (26) the value which must be added to a wall measurement \bar{W}'^W to correct it for degradation is given by

$$[\bar{W}^W - \bar{W}'^W] = \left[\frac{1 - C^W}{C^W} \right] \bar{W}'^W + \left[\frac{C^W - C^F}{C^F} \right] \bar{W}^S \quad (30)$$

Equations (25) through (30) then can be used to construct nomograms to correct the data for AOD in accordance with the simplified model of Reference 47.

In interpreting Equations (29) and (30) we may think of the first term on the right as the "symmetric term" and the second term as the "asymmetric term." For example in the symmetrical degradation model where $C^F = C^W = C$, both Equations (29) and (30) reduce to

$$[\bar{W} - \bar{W}'] = \left[\frac{1-C}{C} \right] \bar{W}' \quad (31)$$

which is the equivalent of Equation (8) in Volume 1 where $\kappa = 1/C$. It follows from Equation (31) that

$$C = \frac{\bar{W}'_{ave}}{\bar{W}_{ave}} \quad (32)$$

Equations (31) and (32) were used in constructing the symmetrical degradation correction nomograms for channels 1 and 2 in Volumes 1 and 2. The term $[\bar{W} - \bar{W}']$ was converted to δT_{BB} ($^{\circ}K$) by means of Figures 7 and 8. A consequence of Equation (31) and the nature of Figures 7, 8, and 9 is that values of δT_{BB} increase with increasing T'_{BB} . This characteristic is apparent in Figures 77, 78, and 79 of Volumes 1 and 2 (except for the first few weeks in Figure 79 where the "compound" degradation model was utilized). On the other hand, for illustrative purposes, the conditions $C^w = 1 > C^r$ could exist, reducing Equation (30) to

$$[\bar{W}^w - \bar{W}'^{(w)}] = \left[\frac{C^w - C^r}{C^w} \right] \bar{W}^s \quad (33)$$

In Equation (33) the asymmetric term alone remains and is essentially constant for any given orbit. A consideration of Figures 7, 8, and 9 and of Equation (33) indicates that when the asymmetric term predominates, the values of δT_{BB} decrease with increasing T'_{BB} . Examples of this characteristic are seen in the channel 1 nomogram for the wall side, Figure 77b, and beginning after Day 400 in the channel 2 nomogram for the wall side, Figure 78b.

It must be remembered that these equations represent only a simplified theoretical approximation and alone may not adequately describe the actual degradation mechanism. Indeed this has been demonstrated in the case of channel 1 data (cf. Section 6.2.1 below). Thus the resulting degradation correction nomograms are only the best estimates available based upon our current knowledge of the problem.

The degradation of the quasi-global values of \bar{W}^i_{ave} for channels 1 and 2 in the latitude region 70°N to 70°S are shown in Figures 70 and 71. The quasi-global degradation of the albedo A^i of channels 3 and 5 for the same latitude range is shown in Figures 73 and 74. In Volumes 1 and 2 the quasi-global values of \bar{W}^i_{ave} and albedo were obtained for the latitude range 55°N to 55°S . In the higher latitude ranges the \bar{W}^i values are lower and the albedo values are higher. This explains why the average quasi-global values of \bar{W}^i_{ave} are slightly lower in Volume 3 and those of albedo are slightly higher than they are in Volumes 1 and 2.

Using the quasi-global averages in Figures 73 and 74, new degradation nomograms shown in Figures 80 and 81 were constructed for channels 3 and 5 for the period March 1—September 30, 1964. The quasi-global averages using both floor and wall data in Figures 73 and 74 are nearly identical to the quasi-global floor averages. The quasi-global averages of the relatively small number of wall values for channels 3 and 5 are respectively about 10.0% and 6.8% higher than those of the floor measurement averages for the same zonal regions. These results are probably caused by the large solar zenith angles and strong forward scattering in the wall direction compared to the floor direction, although asymmetrical degradation may also be a factor.

As in Volumes 1 and 2, an unfavorable satellite-sun geometry existed for several days at a time in the time period covered by Volume 3, permitting the direct rays of the sun to impinge upon the sensors from the wall direction momentarily once during each satellite rotation. (See Section 6.2 of Volume 1 for a discussion of this phenomenon.) There were seven periods during the time interval covered by this volume when such an unfavorable satellite-sun geometry occurred, viz., the periods including the orbits numbered 3727–3845 (TIROS VII days 252–260), 4830–4866 (days 327–329), 5036–5070 (days 340–343), 5899–6004 (days 399–406),

6177–6191 (days 418–419), 6509–6656 (days 440–450), and 6906–6982 (days 467–472).

In several orbits where there was no interference with the long wavelength channels but interference with the short wavelength channels only, the data were reduced. Data users should note that these "sun spikes" in the short wavelength channels produce erroneous values.

6.2.1 Channel 1

Since Volume 2 of this manual was published, the continuing investigation of the instrumental degradation of channel 1 has increased our knowledge of the behavior of the difference in the measurements made through the floor and wall viewing parts of the radiometer, requiring significant changes to be made to the correction nomograms presented in Volumes 1 and 2. Although we have not been able to explain the cause of this floor-wall difference completely to our satisfaction, the amount and its pattern have been determined, allowing corrections to be made to the data. The corrections are given in the two nomograms in Figures 77a and b of this volume. These nomograms cover the useful lifetime of the channel 1 data, and they replace the nomograms in Volumes 1 and 2. The cut-off date for the usefulness of the channel 1 data was determined to be 14 November 1964. Negative-going pulses and a marked shift in the space-viewed level were observed in analog records of the data on 4 November 1964. These characteristics developed rapidly, reaching a magnitude of 4 c.p.s. on 14 November (to be illustrated in the fourth and final volume of this manual).

In investigating the problem, an initially detailed analysis was made using data from two alternating open modes of orbit 5165 on 2 July 1964 to determine the floor-wall differences at this time and to determine the differences as a function of intensity level. One alternating mode occurred at the northernmost extremity of the orbit in the summer, and the other alternating mode occurred at the southernmost extremity of the orbit in the winter. This orbit was chosen to provide the extremes of intensities afforded by high latitude summer and winter stratospheres

for channel 1.¹⁰ All measurements from either the floor or wall having a sensor nadir angle less than 45° and falling within a 5° latitude by 5° longitude area were averaged. Only those average values consisting of ten or more individual measurements from both sides were plotted in Figure 85. The solid line in this figure is a linear least-squares fit to the plotted points.

Using data from Figures 16b and 70 and taking two points along the curve in Figure 85, solutions of Equations (25), (26), and (27) result in values of $C^r = 0.73$, $C^w = 1.02$, and $\bar{W}^s = 0.89 \text{ watts m}^{-2}$ (corresponding to $T_c = 218^\circ\text{K}$.) This computed value of T_c differs by 59°K from the observed temperature of 277°K for this orbit.

Using a value of $\bar{W}^s = 2.32 \text{ watts m}^{-2}$ corresponding to $T_c = 277^\circ\text{K}$ and solving Equations (25), (26), and (27) for C^r and C^w for the point $T_{BB}^{(w)} = 222^\circ\text{K}$, $\Delta T_{BB} = 10^\circ\text{K}$ on the 2 July 1964 (orbit 5165) curve of Figure 85, one obtains $C^r = 0.846$ and $C^w = 0.904$. Using these values in Equations (25) and (26), one obtains the dashed line in Figure 85, demonstrating that, although the two curves are similar in their trend, the mathematical degradation model does not describe adequately the more extreme asymmetrical degradation which is observed. Because the observed data do not adequately fit the degradation model, the corrections were derived semi-empirically by determining the floor-wall difference pattern over the useful lifetime of channel 1.

The correction nomograms in Figures 77a and b were derived by determining the symmetric and asymmetric components separately and then adding the two algebraically. The symmetric component, δT_{BB}^{sym} , was determined from Figure 70 using Equation (31). The average degradation constant $0.5(C^r + C^w)$, used for the symmetrical degradation constant C in Equation (31), was determined from Figure 70 by means of Equation (27), where the denominator is the quasi-global effective radiant emittance in Figure 70 on launch day ($\bar{W}_{ave} = 1.08 \text{ watts}$

m^{-2}) when the radiometer is assumed to be undegraded.

The asymmetric component, $\delta T_{\text{BB}}^{\text{asy}}$, was determined from observed differences between measurements of the same target made through the two sides. The floor-wall differences in the quasi-global value of $T'_{\text{BB}(\text{ave})}$ are given by the separate curves plotted in Figure 83. In addition, use was made of composited grid print map for weekly periods from 19 June 1963 to 14 November 1964. Floor and wall data were mapped separately and values at grid points common to both sides were plotted as ΔT_{BB} vs. $T'_{\text{BB}}^{(w)}$. Least-squares curves were fitted to the data for each of the weekly periods. Three of these, together with the single orbit 5165 curve of Figure 85, are shown in Figure 86 to illustrate the change in the floor-wall difference with time and target intensity. The family of floor-wall difference curves was then used to determine the asymmetric component, $\delta T_{\text{BB}}^{\text{asy}}$. The asymmetric components for floor and wall were taken to be

$$\text{Floor measurements: } \delta T_{\text{BB}}^{\text{asy}} = + \frac{\Delta T}{2}$$

$$\text{Wall measurements: } \delta T_{\text{BB}}^{\text{asy}} = - \frac{\Delta T}{2}$$

The total degradation corrections, then, resulted from the sum of the symmetric and asymmetric components, namely

$$\delta T_{\text{BB}} = \delta T_{\text{BB}}^{\text{sym}} + \delta T_{\text{BB}}^{\text{asy}} \quad (34)$$

The analogy between Equation (34) and Equations (29) and (30) is clear.

For example, from Figure 77a, it is seen that a measurement $T'_{\text{BB}} = 230^\circ\text{K}$ made through the floor during orbit 3600 should be increased by adding 2.1°K , yielding a corrected measurement of 232.1°K . On the other hand, the same measurement made through the wall during orbit 3600 should be increased by 8.5°K , yielding a corrected measurement of 238.5°K .

The reason for the degradation studies, of course, was to improve the accuracy of the data in order to interpret them with a greater degree of confidence in terms of physically meaningful parameters. The question, then, to be answered is "Have the corrections sig-

nificantly improved the data?" Three pieces of evidence are presented to substantiate the conclusion that they have.

Weekly averages of uncorrected floor and wall measurements of the data in the 10°N to 10°S zone were plotted in Figure 87. This zone was chosen because the lower stratosphere is generally assumed to have little variation in temperature during the year. The plotted points show an increasing difference with time between floor and wall values, as well as an initial sharp decrease in both the floor and wall measurements. The corrected data averaged over a week in the 10°N to 10°S zone show a fairly constant level of temperatures except for a drop in January and a rise in June. These perturbations might be real. The otherwise general constancy with time of these averages is good especially from one period to the corresponding period a year later. The content of Figure 87 adds some degree of confidence that the corrections have eliminated the large differences between floor and wall measurements and have obtained reasonable constancy in a region where these temperatures presumably show little variation.

On the acquisition day of 21-22 January 1964, radiosonde data were collected from all over the world, plotted, and analyzed. The 30 mb temperatures were then compared to the corrected 15μ channel equivalent blackbody temperatures acquired on the same day, as shown in Figure 88. Both the floor and wall temperatures show a systematic difference of about 7°C from the 30 mb temperatures. The 7°C difference is unimportant as there is no reason for the 15μ channel temperatures to correspond exactly with the 30 mb temperatures because the 15μ channel measures an integrated temperature through a broad region of the lower stratosphere. What is important, however, is that both sides show the same difference indicating that the large differences between wall and floor measurements have been eliminated at this time.

The third indication of the validity of the corrections was obtained by comparing the corrected temperatures to those predicted by

radiative transfer theory for several synoptic situations. The synoptic cases chosen for comparison of observed satellite temperatures and theoretically predicted satellite temperatures are listed in Table XIV. Vertical temperature data for the first two cases were taken from the Meteorological Rocket Network Data Reports.⁵⁰ The third case represents a radiosonde measurement.⁵¹ Columns 1 and 2 of Table XIV give the location and date of the three synoptic cases. The predicted satellite temperature, obtained from radiative transfer theory, is listed in column 3. The next two columns give the uncorrected wall and floor temperature as obtained from grid print maps. The appropriate temperature corrections, from Figures 77a and 77b, are given in the next two columns and the corrected temperatures in the

last two columns. A comparison of the predicted and corrected T_{BB} values indicates that the temperature corrections essentially eliminate the floor-wall asymmetry in the data. However, the corrected T_{BB} values are systematically about 3–4°K higher than the predicted T_{BB} values. This systematic difference may be attributed to errors in the solution of the radiative transfer equation and/or inadequate temperature corrections. We do not feel that it is possible to separate this small systematic difference with respect to the source of error. Hence, we have not attempted to force agreement between the two processes. However, it can be seen from Table XIV that the corrections do generally improve the data.

TABLE XIV—Comparison of Measured and Theoretically Predicted Values of T_{BB} for Channel 1

Location	Date	Predicted T_{BB}	Observed T_{BB}		Corrections δT_{BB}		Corrected T_{BB}	
			Floor	Wall	Floor	Wall	Floor	Wall
Ascension Island	1/16/64	220	223	215	+1	+8	224	223
Lochboisdale	1/17/64	211	214	206	-1	+9	213	215
Palestine, Texas	9/11/64	228	232	219	0	+12	232	231

6.2.2 Channel 2

The possibility of asymmetrical degradation occurring in the channel 2 data, before the visual detection of negative-going pulses and a rise in the space-viewed level on the analog records, was also investigated. Figure 84 represents the quasi-global averages for the wall and floor sides separately from Day Zero to Day 600. Since the floor measurements are primarily daytime data and the wall measurements primarily nighttime data, it was assumed that the 2.75°K difference observed between the floor and wall sides on Day Zero was caused by diurnal meteorological variations in the Earth and its atmos-

sphere. To determine the effect due solely to instrumental differences, the assumed diurnal difference between floor and wall measurements at launch day was eliminated from the difference of the floor and wall quasi-global averages in Figure 84. This showed that the floor-wall difference due to assumed asymmetrical degradation began to appear about Day 330, and became progressively larger after that date.

In the midrange of the first 330 days, there is a suggestion in Figure 84 that a mirror image of the usual sense of asymmetrical degradation occurred, i.e., that wall measurements might be several degrees

higher than *floor* measurements over the same target. Attempts to corroborate this suggestion were made by comparing floor and wall measurements through clear skies over oceanic regions. However, because of lack of accurate supporting data concerning surface temperatures, the state of cloudiness, and the atmospheric water vapor and temperature profiles, the results were inconclusive (cf. Figure 89).

It was pointed out in Section 6.2 of Volume 1 that the cyclic pattern evident in Figure 75 might be due, at least in part, to a wall-floor difference. Referring to Figure 75 (and the discussion in Volume 1) it is seen that the Equatorial Pacific Ocean averages during periods 2, 6, 10, 14, and 17, when measurements were made predominantly through the *wall* side at local midnight, are higher by about 1.5 watts m^{-2} than they are during periods 4, 8, 12, and 15, when measurements were made predominantly through the *floor* side at local noon. From Figure 8 it is seen

that this \bar{W}' difference indicates that the *wall* T'_{BB} measurements were about 3°K *higher* than the *floor* measurements during the first 300 days (through period 17 of Figure 75) for values of T'_{BB} of approximately 270°K . To determine what part of this difference is due to instrumental degradation one would have to resolve what part is due to other effects, such as diurnal variations in cloudiness. To resolve this and similar questions adequately appears to be virtually impossible at this time. Therefore, we have not attempted to reflect a slight amount of wall-floor asymmetry that may exist in the first 300 or so days in the channel 2 correction nomograms. Thus, it was assumed that symmetrical optical degradation prevailed until Day 330 after which asymmetrical degradation occurred. Hence, in constructing the correction nomograms, the symmetrical optical degradation model described in Volume 1 was continued up to Day 330 and the method described below was used after Day 330.

One half of the day-night difference of 2.75°K at launch was first subtracted from

the floor $\bar{W}_{ave}^{i(F)}$ values in Figure 84, and added to the wall $\bar{W}_{ave}^{i(W)}$ values. These adjusted floor and wall quasi-global averages, then, were assumed to apply to the corresponding quantities $\bar{W}'^{(F)}$ and $\bar{W}'^{(W)}$ in Equations (25), (26), and (27). With the quantities C^F , C^W , and \bar{W}^S known, correction parameters were calculated for different values of $\bar{W}'^{(F)}$ and $\bar{W}'^{(W)}$ from Equations (29) and (30). Finally, the values of \bar{W}' were converted to T'_{BB} and $[\bar{W} - \bar{W}']$ to δT_{BB} by means of Figure 8, and parametric curves of δT_{BB} vs. TIROS Day for different values of T'_{BB} were plotted for floor and wall sides separately.

The resulting correction nomograms are shown in Figures 78a and 78b. These corrections are to be added algebraically to the wall and floor T'_{BB} measurements contained on the FMR tapes. For example, from Figures 78a and b it is seen that an equivalent blackbody temperature of 288°K measured by either the floor or wall side of channel 2 during orbit 4510 should be increased by 11°K , yielding a corrected measurement of 299°K . On the other hand, during orbit 6000 (after the onset of asymmetrical degradation), it is seen that an equivalent blackbody temperature of 267°K measured by the floor side of channel 2 should be increased by 10°K (Figure 78a) or an equivalent blackbody temperature of 265.5°K measured by the wall side should be increased by 11.5°K (Figure 78b), yielding in both cases a corrected measurement of 277°K .

An attempt was made to carry out an independent check of the nomograms. Measurements from the floor and wall sides were taken over equatorial oceanic regions at monthly intervals from June 19, 1963 to September 21, 1964. From an analysis of available synoptic data and the satellite data, only those measurements which appeared to be taken through clear skies were utilized. To eliminate limb darkening effects, all measurements were made under zenith angles of 30° or less. However, since the channel 2

spectral interval is not a perfect window, the T'_{BB} values were adjusted for atmospheric absorption (primarily due to water vapor) by means of Equation (15) of Reference 33, where the "moist atmosphere" was assumed. The resulting calculation yielded $T'_{BB(SFC)}$, the satellite-inferred surface temperature. The assumed actual surface temperature, T_{SFC} , was taken from Reference 52. The difference value $M = T_{SFC} - T'_{BB(SFC)}$ was calculated in each case and the results plotted in Figure 89. The M values then should be a measure of instrumental degradation. A rather large scatter in the data is evident in Figure 89. However, linear least-squares fits to the floor and wall data separately tend to corroborate the sense and magnitude (cf. Figures 78a and b) of the asymmetrical degradation previously determined.

6.2.3 Channel 4

The history of channel 4 data and degradation correction nomograms from launch until Day 249 are given in Volumes 1 and 2. Because of the subsequent erratic behavior and severe degradation of channel 4 data, their use after Day 249 is not recommended and, hence, no further correction nomograms are given.

6.2.4 Channel 3

The average channel 3 value of ΔF as shown in Figure 68 decreased slightly to approximately -1.50 cps throughout the time period of Volume 3, indicating a continued small amount of electronic degradation. The compound degradation model was used; the correction nomogram in Figure 80 was constructed using the method described in Section 6.2.4, Volume 1. The values of A^i used for the correction nomogram were obtained from the least-squares quadratic curve drawn through the quasi-global averages of Figure 73. The resulting degradation nomogram is used in the same way as that in Volumes 1 and 2.

6.2.5 Channel 5

The absolute magnitude of channel 5 values in ΔF in Figure 68 remained less than 1 cps. Thus, the correction nomogram in Figure 81 was constructed from the com-

pound degradation model with a value of $\rho^i = 0$. It is used in the same way as in Volumes 1 and 2.

6.3 Estimate of the Accuracy of the Data

The estimates of accuracy for channel 1 have been revised in view of the additional studies of asymmetrical degradation occurring in that channel from launch day. In all cases the estimates of accuracy given below apply to the midrange of target intensities. The accuracy of the thermal channels suffers additionally at very low target temperatures.

6.3.1 Channel 1

The estimated short-term relative accuracy of T_{BB} measurements from a given side (floor or wall) is $\pm 2^\circ\text{K}$, and the estimated absolute accuracy increases linearly from $\pm 7^\circ\text{K}$ at launch to $\pm 12^\circ\text{K}$ on 30 September 1964 after applying corrections from Figure 77.

6.3.2 Channel 2

The estimated short-term relative accuracy of T_{BB} measurements from a given side is $\pm 2^\circ\text{K}$, and the estimated absolute accuracy increases linearly from $\pm 5^\circ\text{K}$ on 1 March 1964 to $\pm 10^\circ\text{K}$ on 30 September 1964.

6.3.3 Channel 4

No estimates for the period covered by Volume 3 are given.

6.3.4 Channel 3 and Channel 5

The estimates of the relative and absolute accuracies of channel 3 and 5 data have not changed from Volume 1.

VII. CONCLUSIONS

The major limitation of the TIROS VII medium resolution radiometer experiment is the uncertainty in the absolute values of the measurements, resulting from the degradation of the radiometer response, and, also, from electronic degradation which, for the first time, was conclusively detected in TIROS VII. The degradation corrections given in Section VI can serve as a guide for interpreting the data in terms of absolute values. However, it must be emphasized that these corrections are only our best estimates, based upon certain simplifying assumptions,

of the effects of a complicated degradation mechanism which we do not yet fully understand, and that the measurements thus corrected may still contain appreciable uncertainties.

Because of the extended lifetime of the radiometer, the potential of the TIROS VII radiometric data for climatological studies is significantly greater than it was for previous TIROS satellites. In utilizing the measurements over extended periods, however, channel 2 and 5 data should be used in lieu of

channel 4 and 3 data, respectively, wherever possible because of the superior stability characteristics of the former two channels. Channel 4 data are considered reasonably valid only to day 249.

The data from channels 1, 2, 3, and 5 throughout the period covered by this volume are of value for studies involving relative measurements over a short period of time, for example, the contrast mapping of cloud systems.

VIII. REFERENCES

References 1 to 49 are found in Volume 1.

50. "Meteorological Rocket Network January 1964 Firings," IRIG-MWG, No. 29-64, *U.S. Army Electronics Research and Development Activity*, White Sands Missile Range, New Mexico.
51. Hilleary, D. T., D. Q. Wark, and D. G. James, "An Experimental Determination of the Atmospheric Temperature Profile by Indirect Means," *Nature*, 205, 489-491, 1965.
52. "World Atlas of Sea Surface Temperatures Second Edition-1944" H. O. Publication No. 225, *Navy Hydrographic Office*, Washington, D. C. 1954 (Reprint).

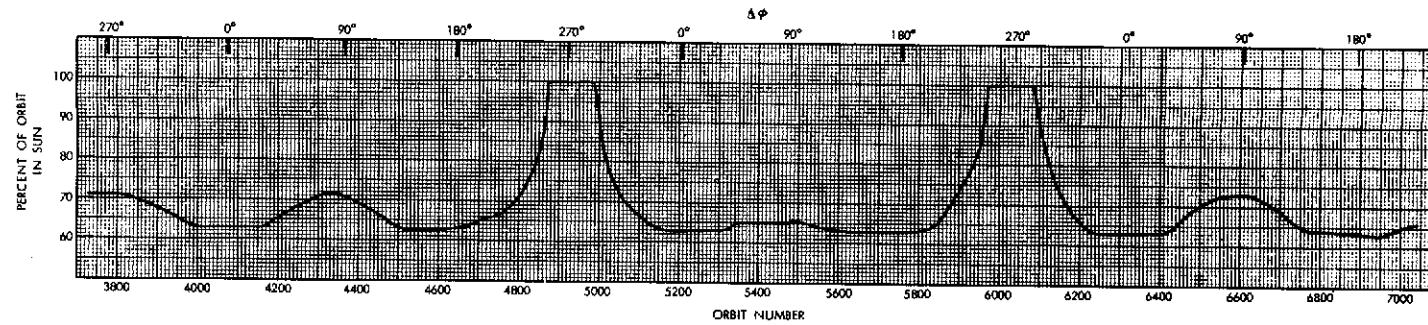


Figure 16a—Percent of the orbital period which the satellite spends in sunlight versus orbit number. Also shown on the upper abscissa is $\Delta\phi$, the right ascension of the sun minus the right ascension of the orbital ascending node.

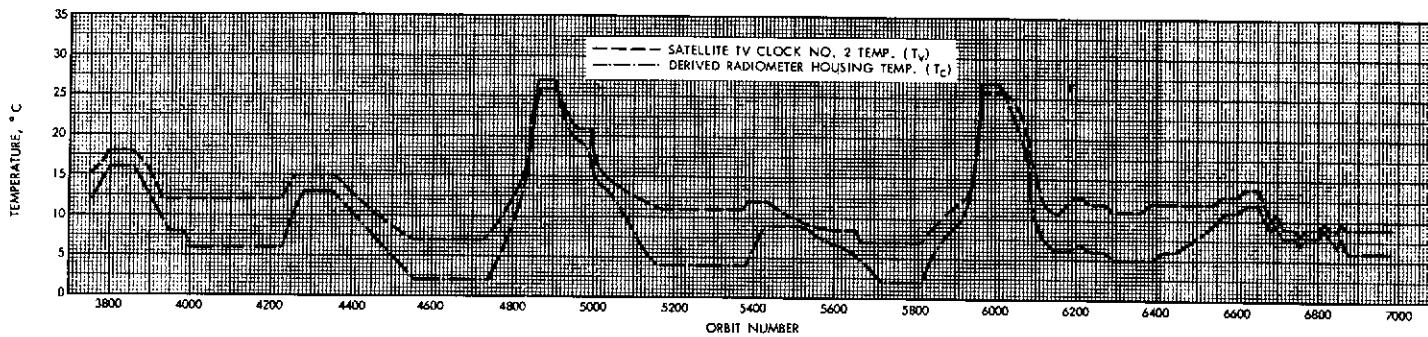


Figure 16b—Television clock number 2 temperature (T_v), and derived radiometer housing temperatures (T_c) versus orbit number. Telemetry of the "housekeeping information" for the radiometer ceased at orbit 1276, after which T_c was derived from T_v .

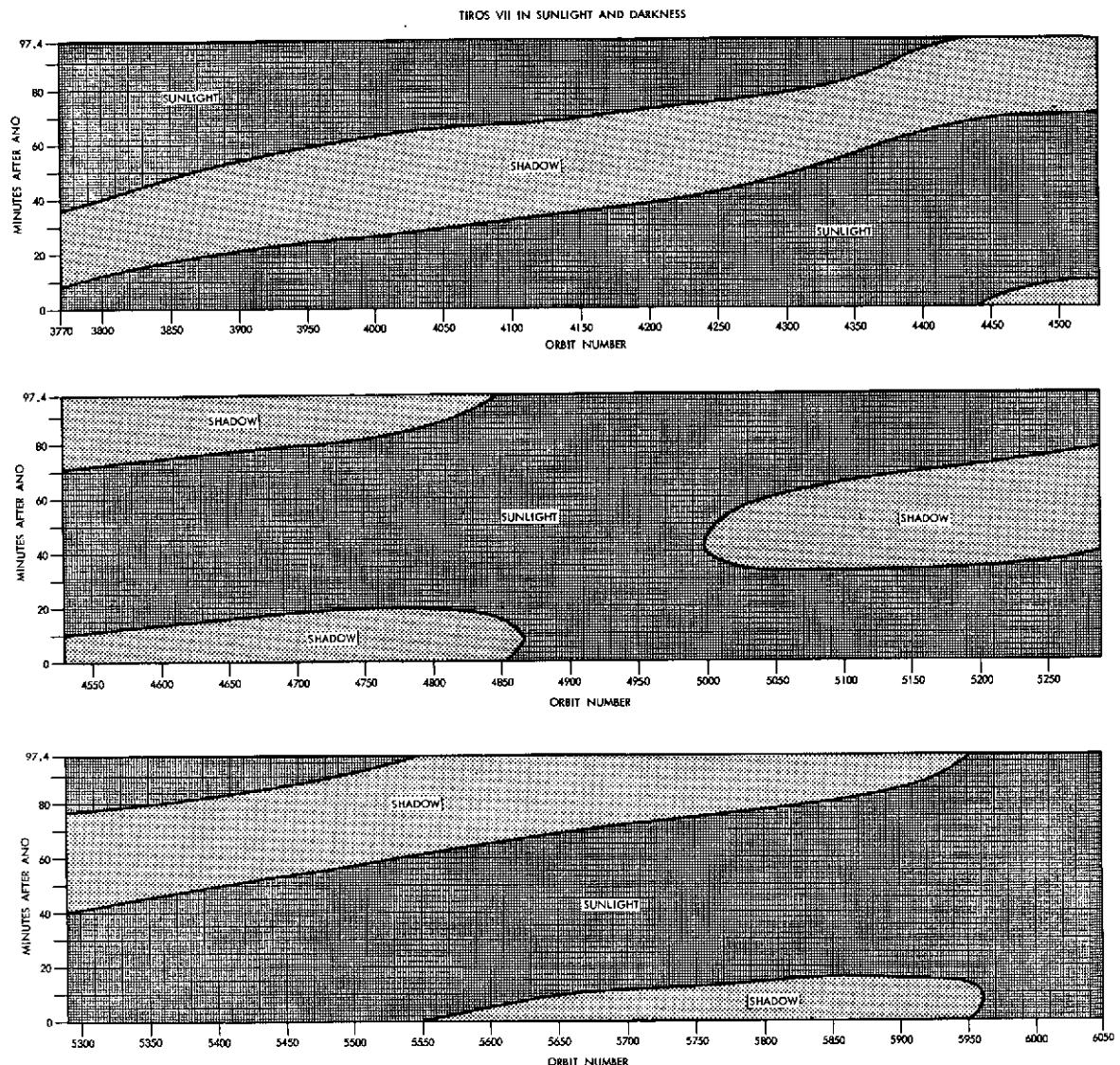


Figure 18—Portions of the 97.4 minute orbital period when the satellite is in sunlight and in the Earth's shadow, expressed in minutes after the ascending node, versus orbit number.

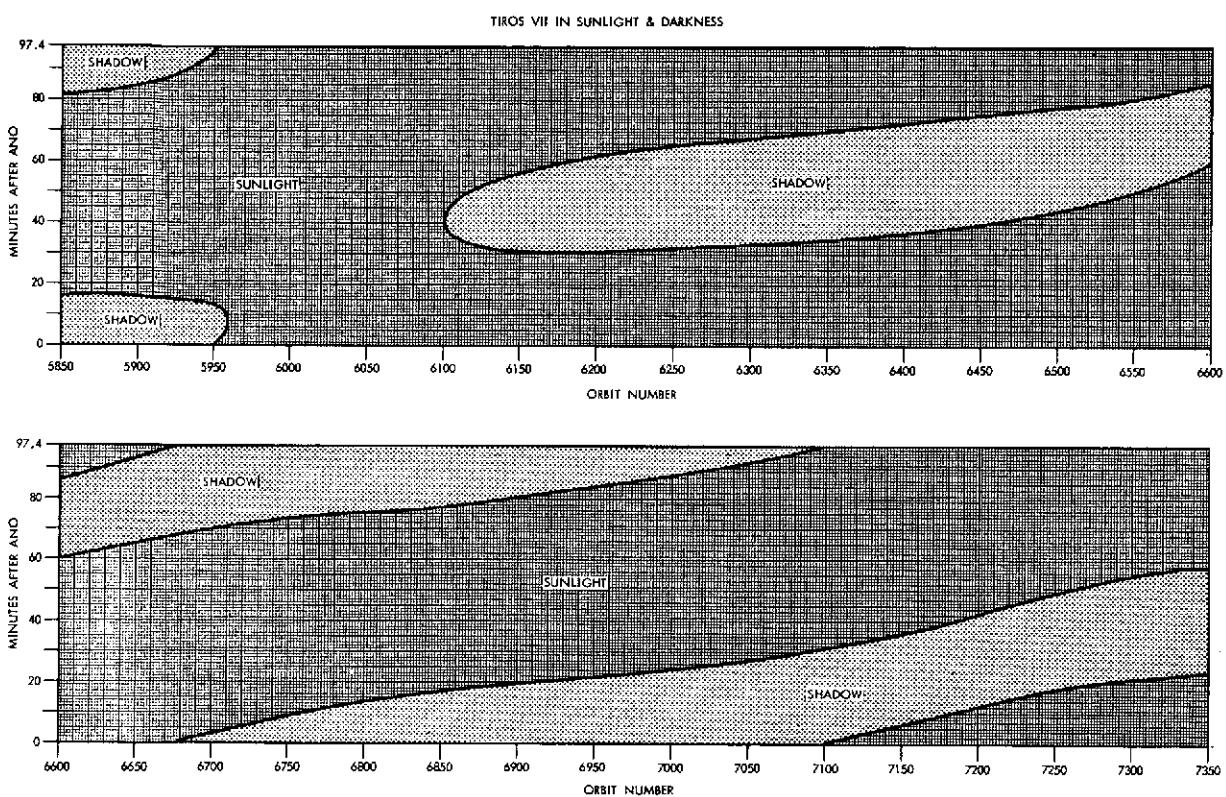
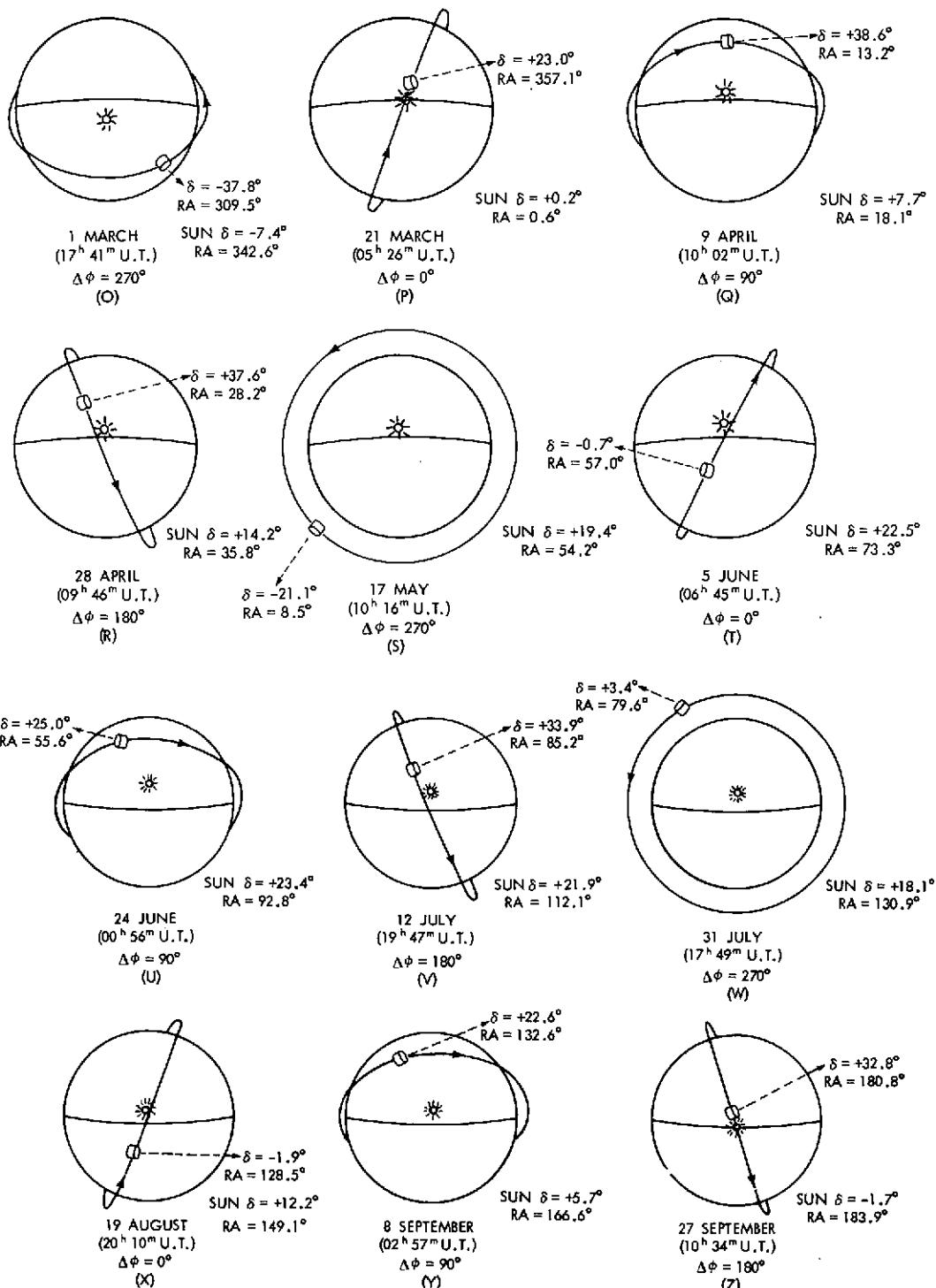


Figure 18—Portions of the 97.4 minute orbital period when the satellite is in sunlight and in the Earth's shadow, expressed in minutes after the ascending node, versus orbit number.



ALL CALENDAR DATES ARE IN 1964

Figure 66—(o, p, r, s, t, u, v, w, x, y, and z) heliocentric views of the Earth and the precessing TIROS VII orbital plane. The celestial coordinates of the sun and the satellite spin vector are shown for each selected day. The time is given to the nearest minute and corresponds to the given value of $\Delta\phi$.

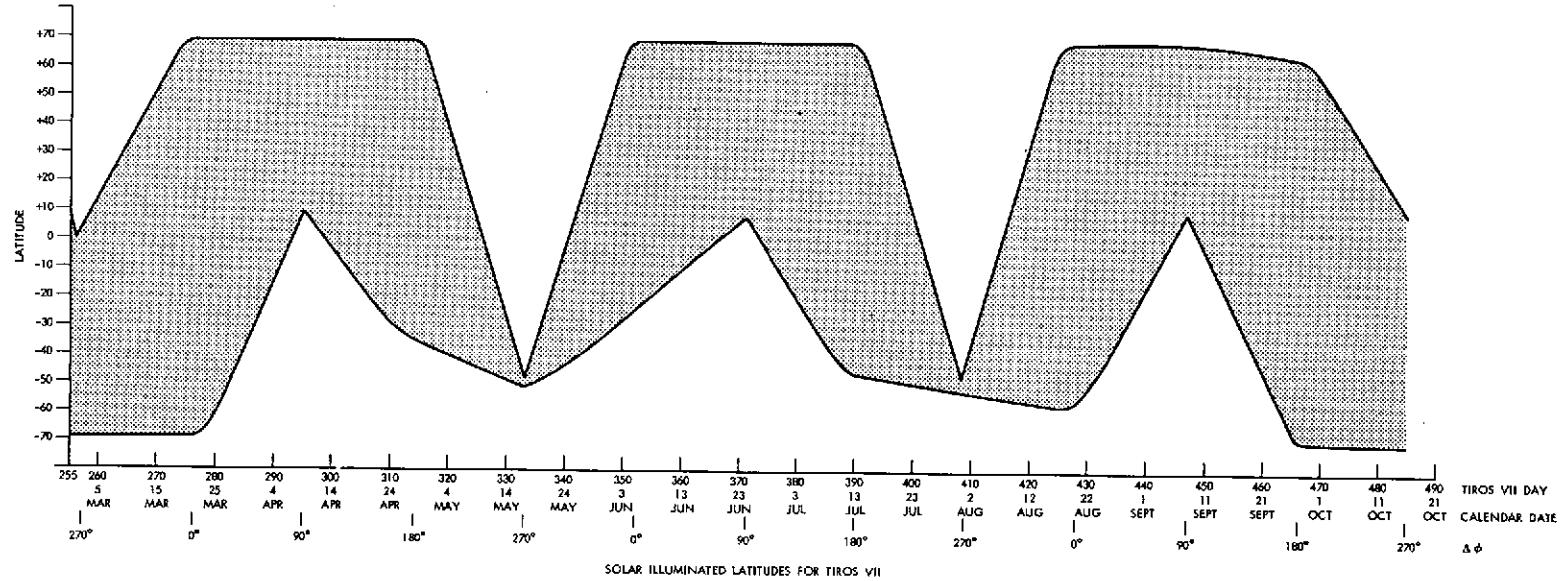


Figure 67—Solar illuminated latitudes for TIROS VII.

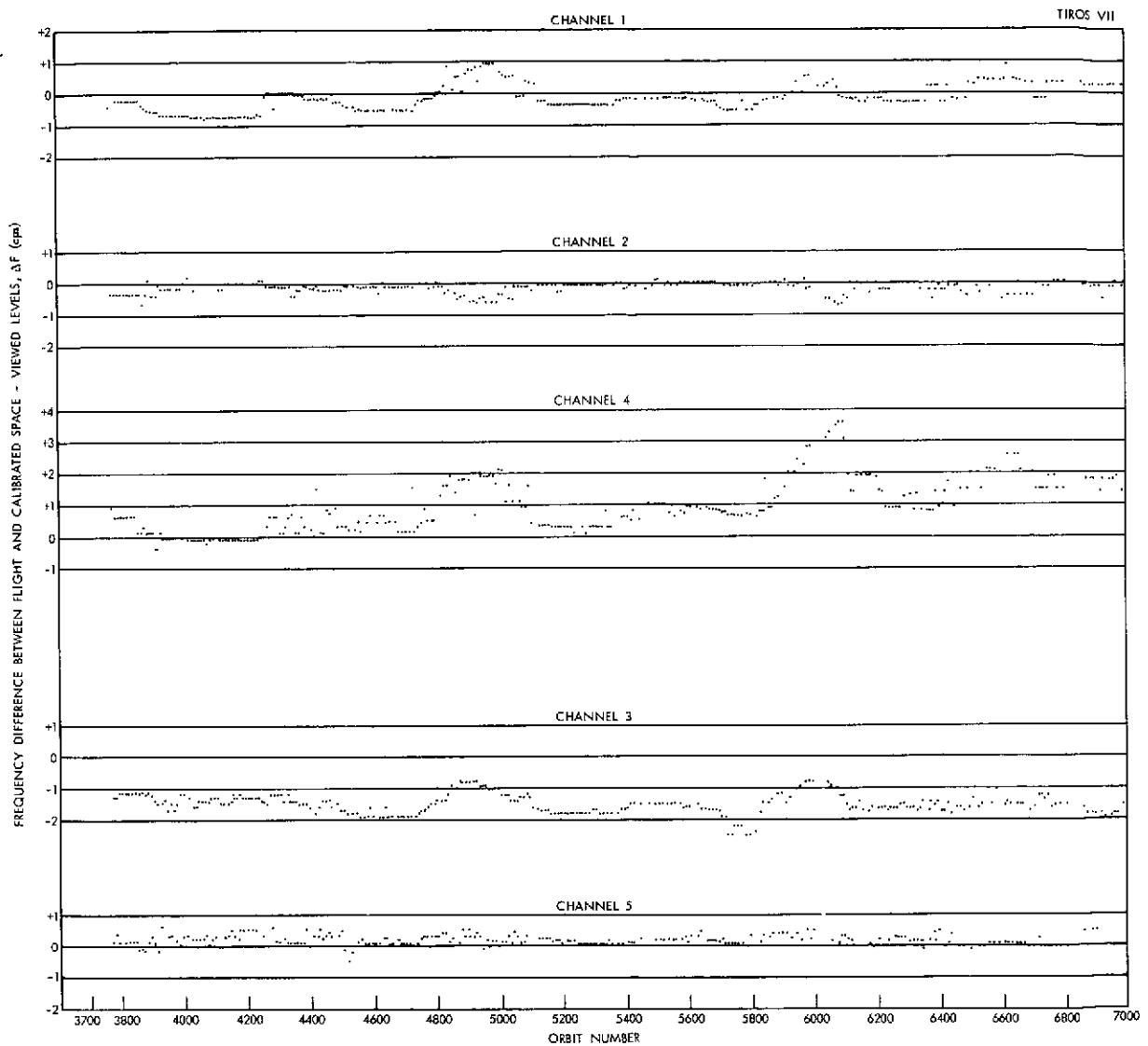


Figure 68—Frequency differences between flight and calibrated space-viewed levels vs. orbit number for channels 1 to 5.

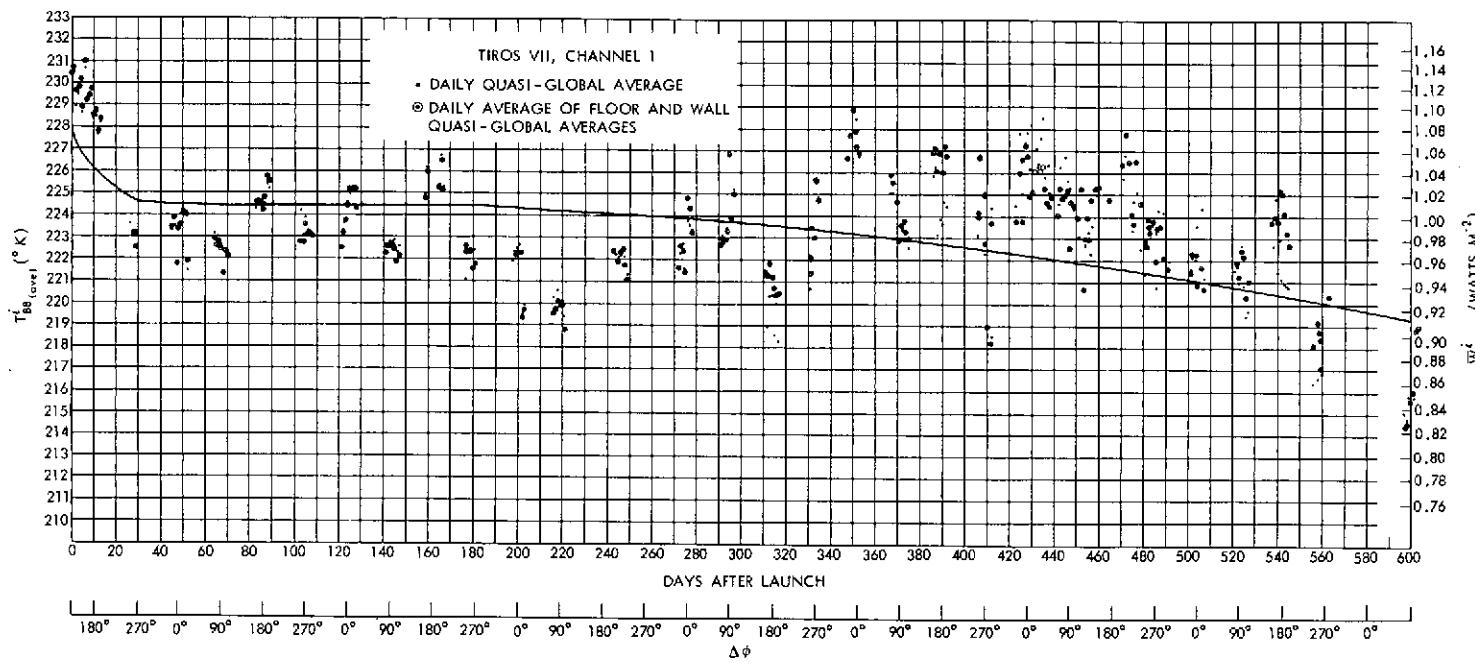


Figure 70—The average quasi-global equivalent blackbody temperature, $T_{BB(ave)}^i$ for channel 1 vs. days after launch. A scale for converting to \overline{W}_{ave}^i is shown along the right hand ordinate. Two quasi-global averages are shown for the latitudinal range 70°N to 70°S : (1) the average of all measurements, both wall and floor, and (2) the average of the separate floor and wall quasi-global averages.

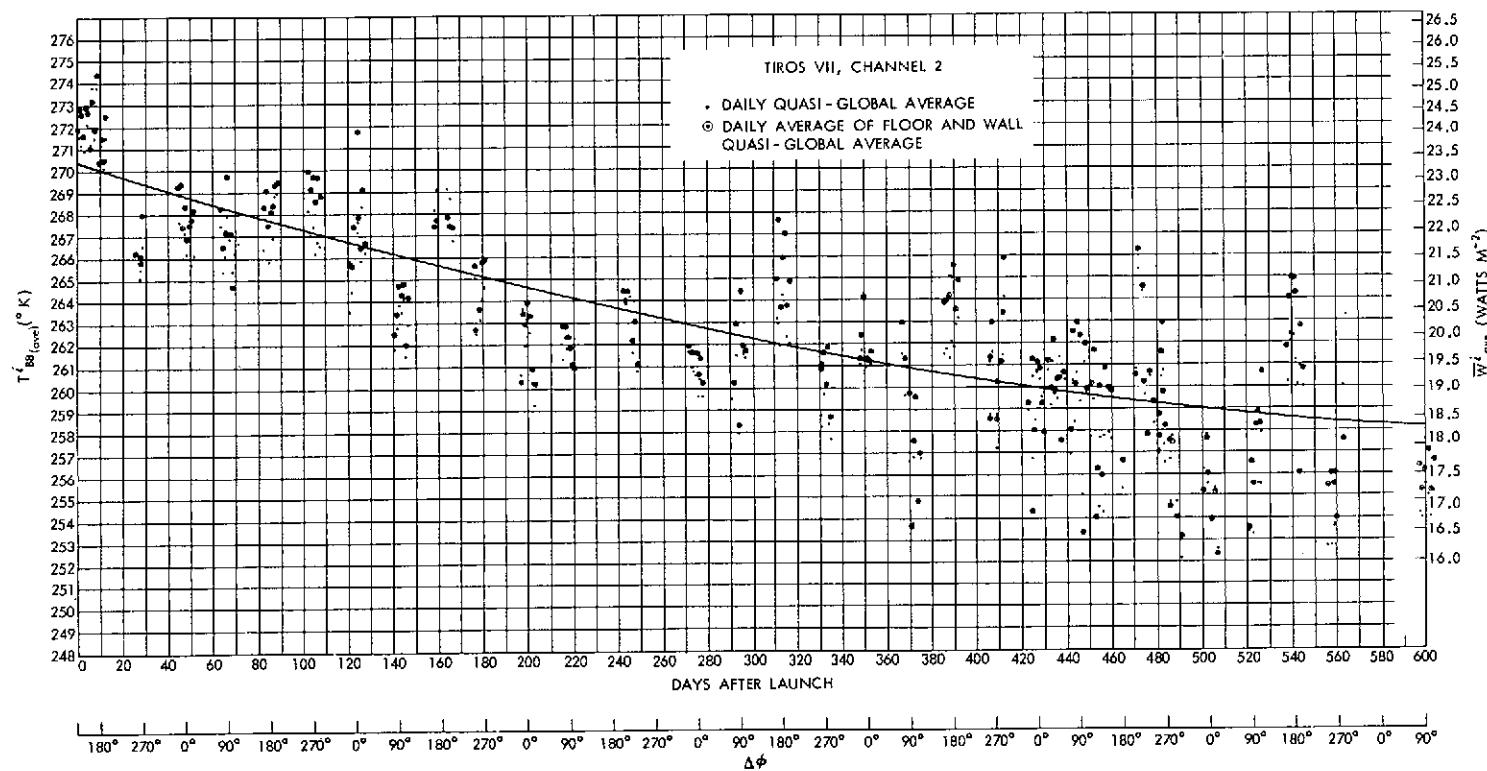


Figure 71—The average quasi-global equivalent blackbody temperature, $T_{BB(ave)}^1$ for channel 2 vs. days after launch. A scale for converting to \overline{W}_{ave}^1 is shown along the right hand ordinate. Two quasi-global averages are shown for the latitudinal range 70°N to 70°S: (1) the average of all the measurements, both wall and floor, and (2) the average of the separate floor and wall quasi-global averages.

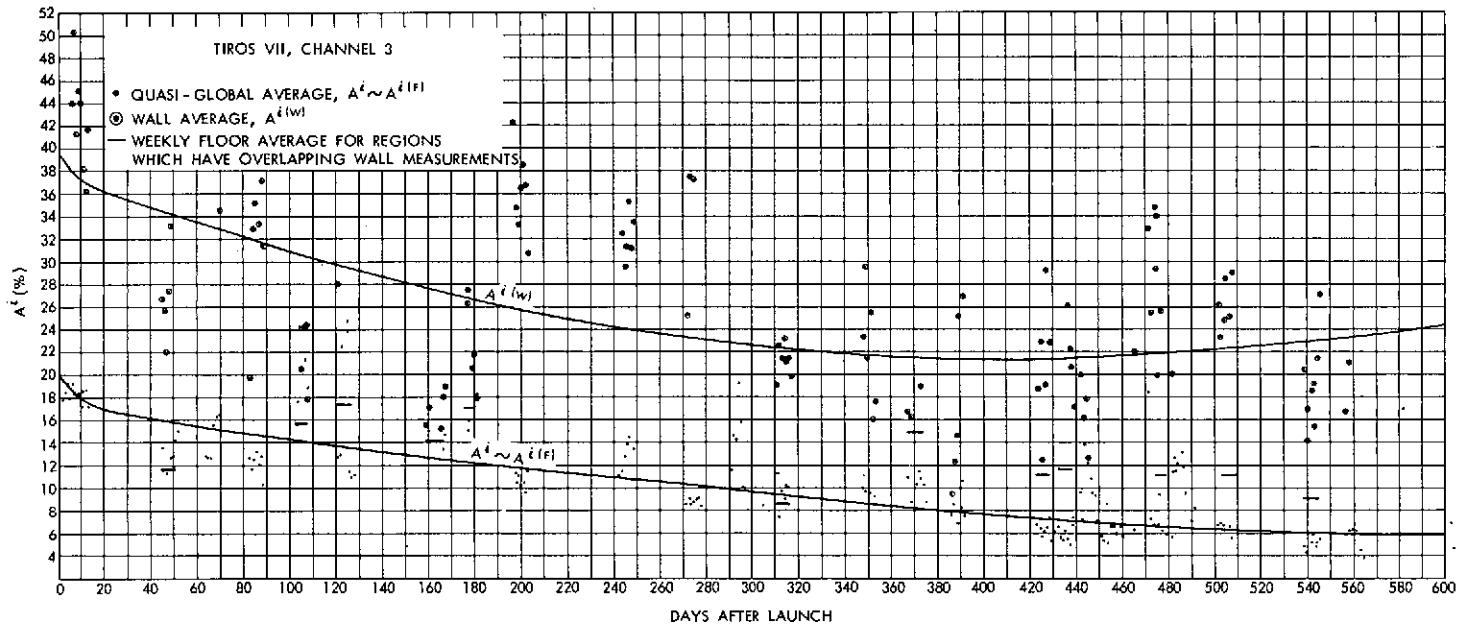


Figure 73—The average quasi-global A^i and $A^{i(w)}$ in the latitudinal range 70°N to 70°S for channel 3 versus days after launch. Since there are few wall measurements, the quasi-global averages of $A^{i(F)}$ and A^i are essentially the same. The bars represent the weekly averages of floor measurements for regions which have overlapping wall measurements.

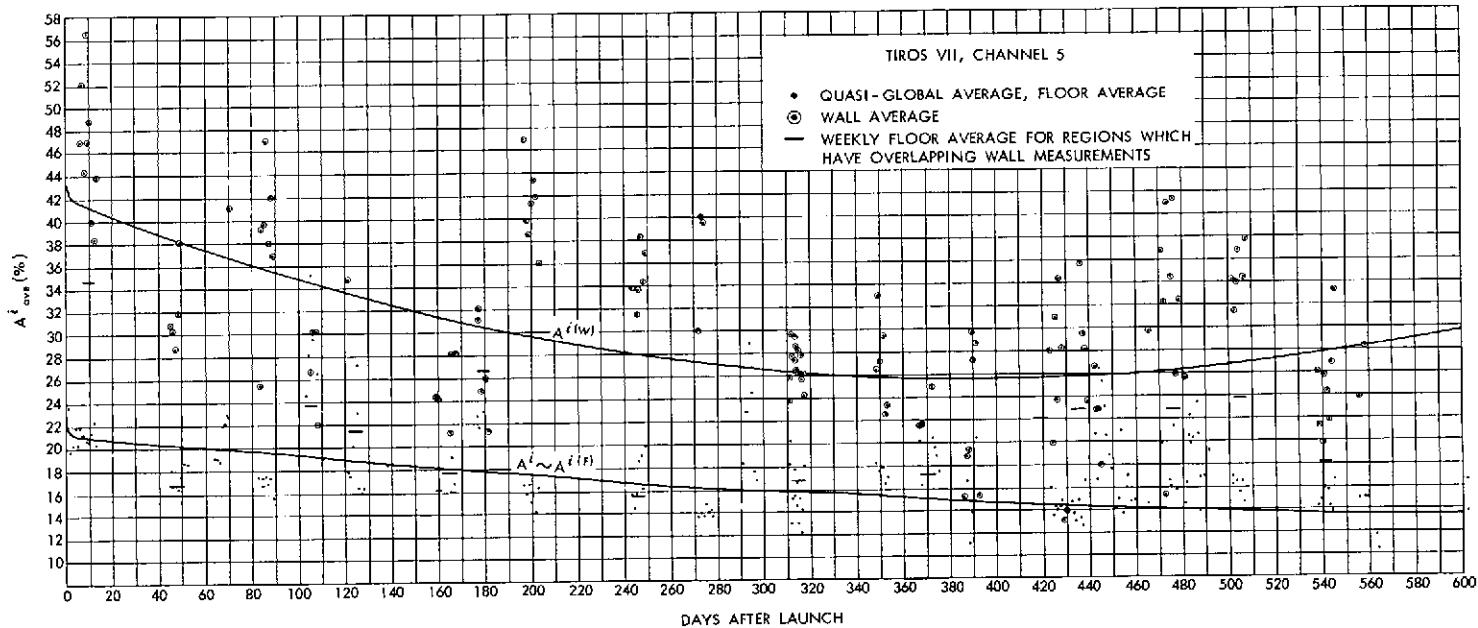


Figure 74—The average quasi-global A^i and $A^{i(w)}$ in the latitudinal range 70°N to 70°S for channel 5 vs. days after launch. Since there are few wall measurements, the quasi-global averages of $A^{i(w)}$ and A^i are essentially the same. The bars represent the weekly averages of floor measurements for regions which have overlapping wall measurements.

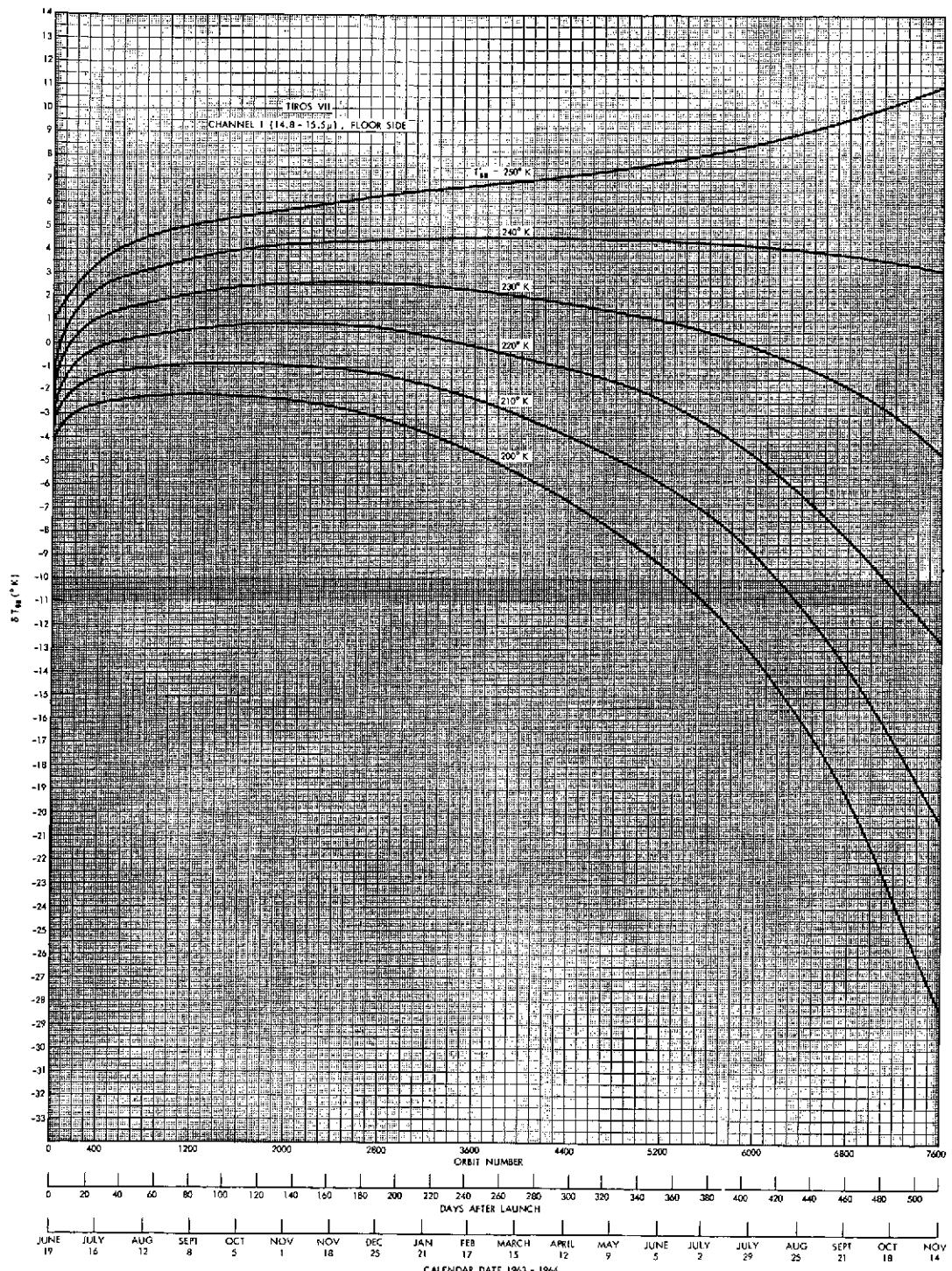


Figure 77a—Temperature corrections δT_{BB} vs orbit number, channel 1, floor side. An equivalent blackbody temperature measurement, T'_{BB} , should be corrected by adding the δT_{BB} value corresponding to the appropriate orbit number. (δT_{BB} includes both symmetric and asymmetric components.)

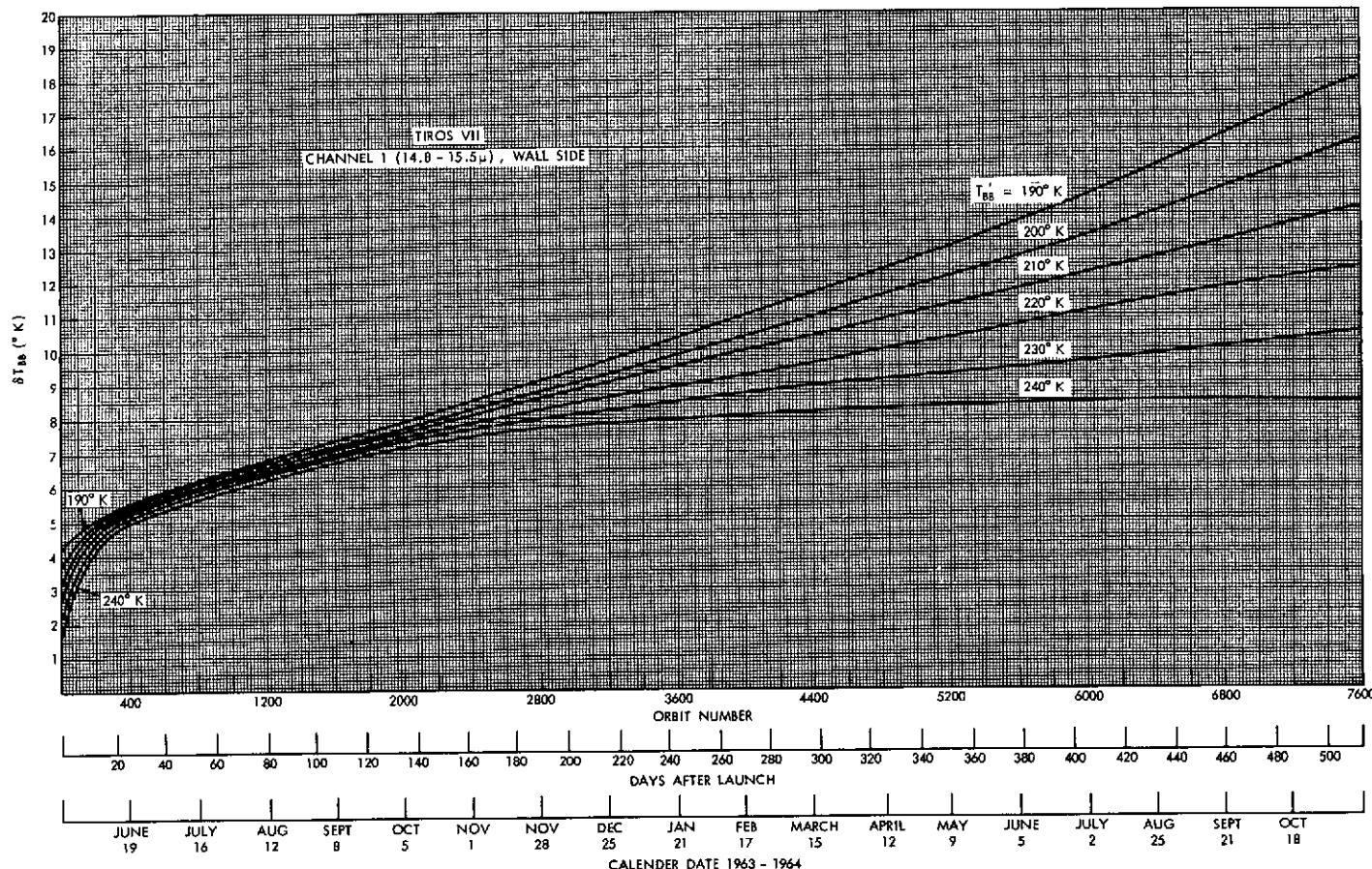


Figure 77b—Temperature corrections δT_{BB} vs. orbit number, channel 1, wall side. An equivalent blackbody temperature measurement, T'_{BB} , should be corrected by adding the δT_{BB} value corresponding to the appropriate orbit number. (δT_{BB} includes both symmetric and asymmetric components.)

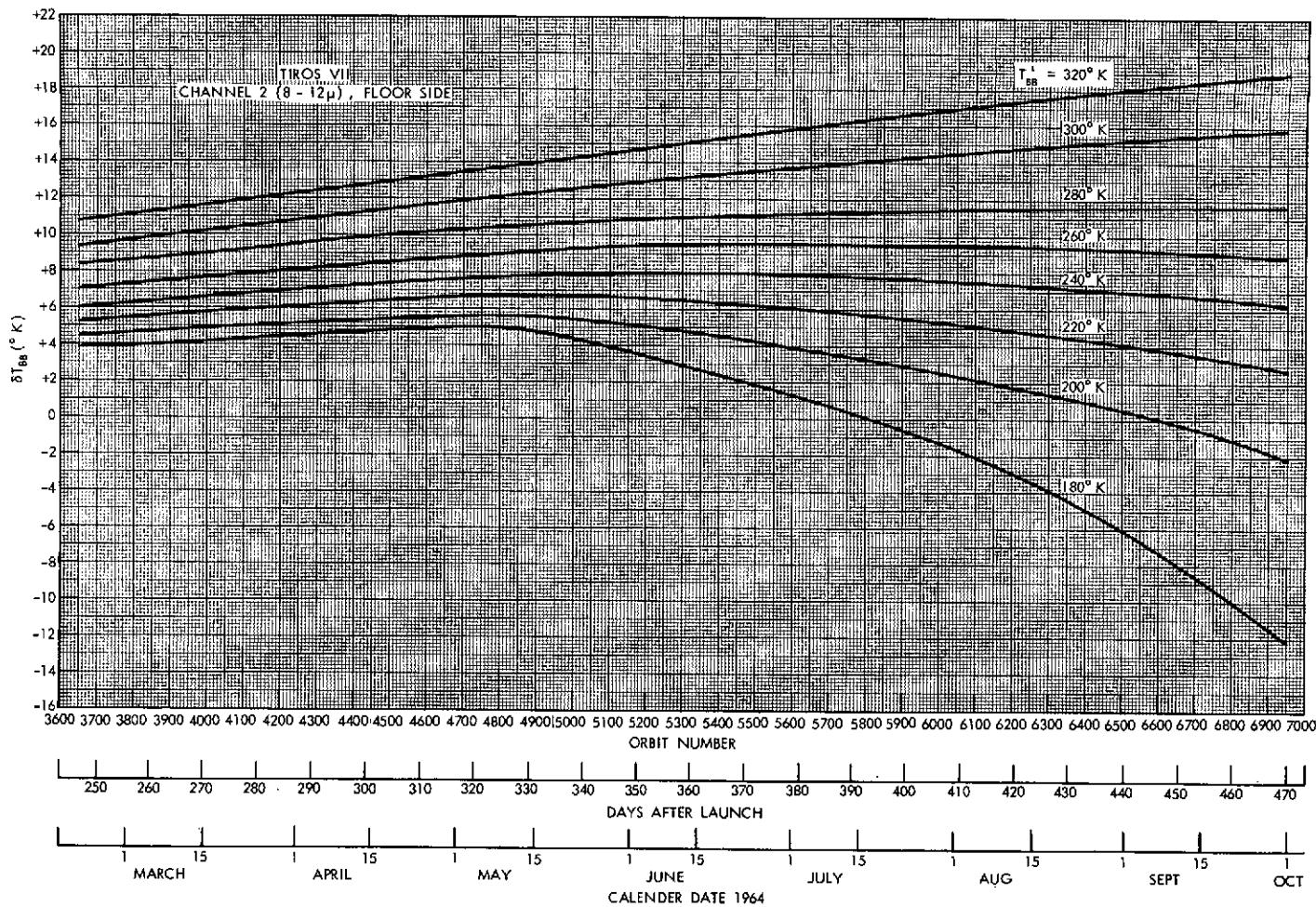


Figure 78a—Temperature corrections δT_{BB} vs. orbit number, channel 2, floor side. An equivalent blackbody temperature measurement, T'_{BB} , should be corrected by adding the δT_{BB} value corresponding to the appropriate orbit number. (δT_{BB} includes both symmetric and asymmetric components.)

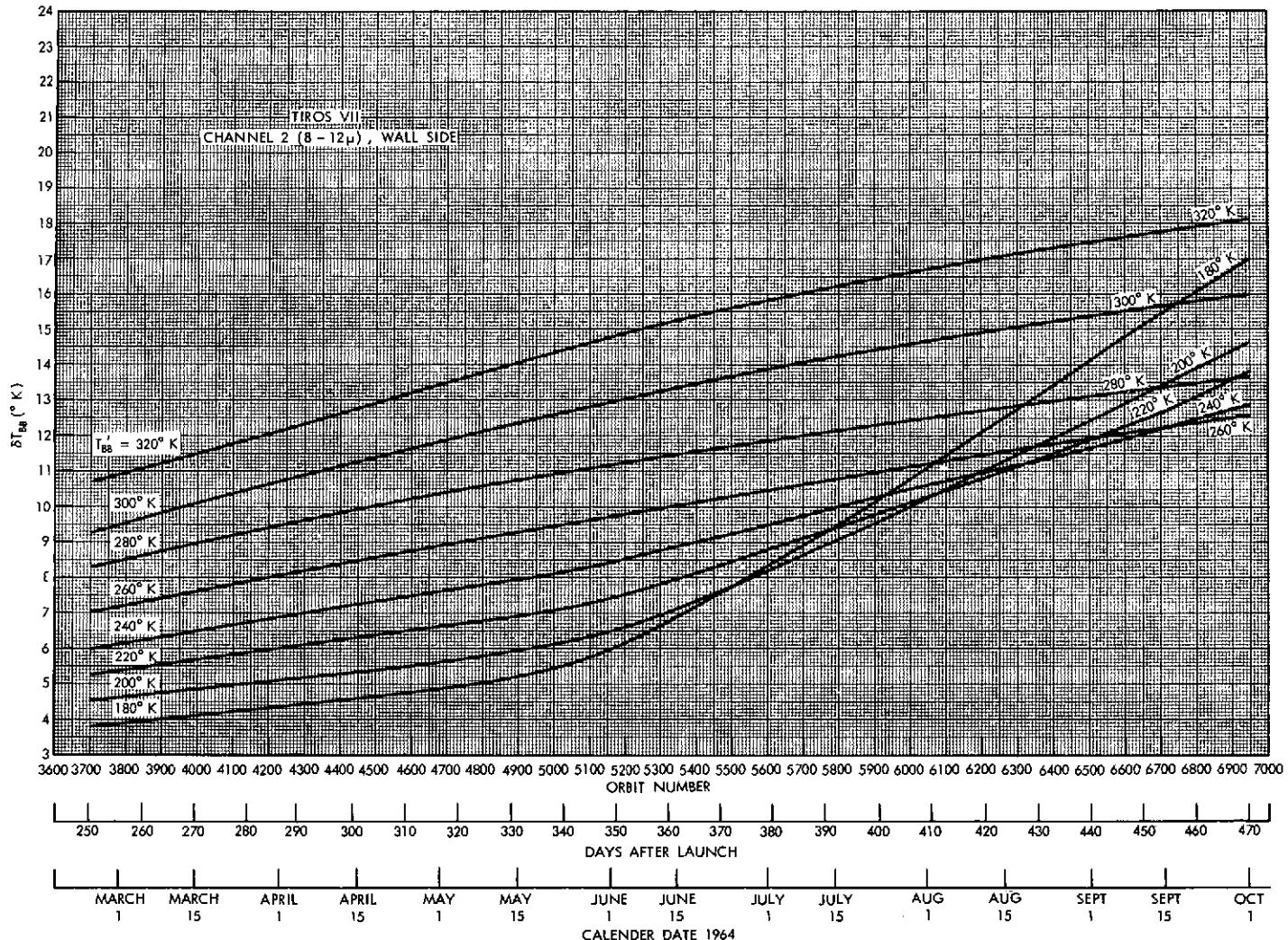


Figure 78b—Temperature corrections δT_{BB} vs. orbit number, channel 2 wall side. An equivalent blackbody temperature measurement, T'_{BB} , should be corrected by adding the δT_{BB} value corresponding to the appropriate orbit number. (δT_{BB} contains both symmetric and asymmetric components.)

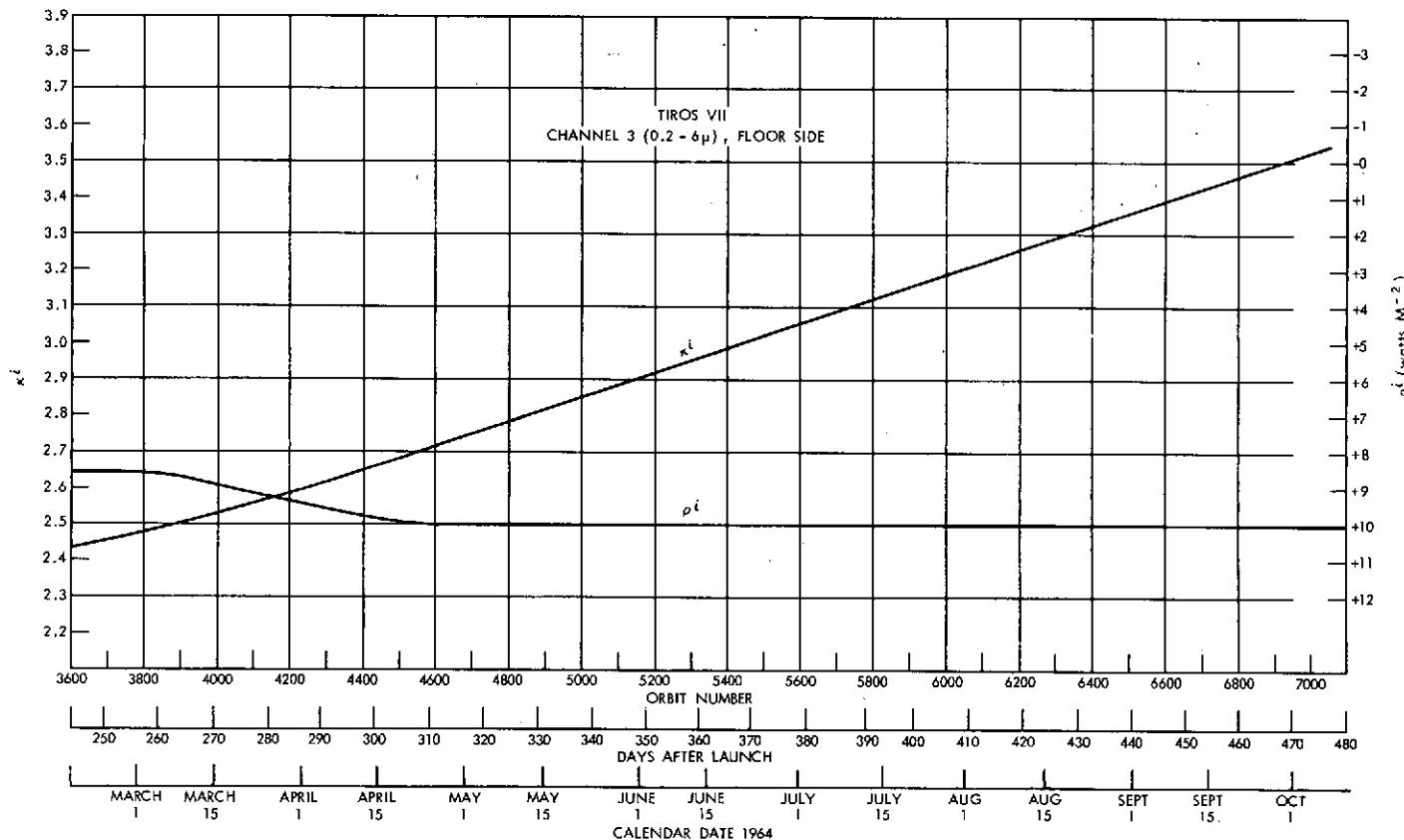


Figure 80—Normalizing parameters κ^i and ρ^i for channel 3. A measurement \bar{W}' should be corrected to yield \bar{W} by means of the equation $\bar{W} = \kappa^i (\bar{W}' + \rho^i)$.

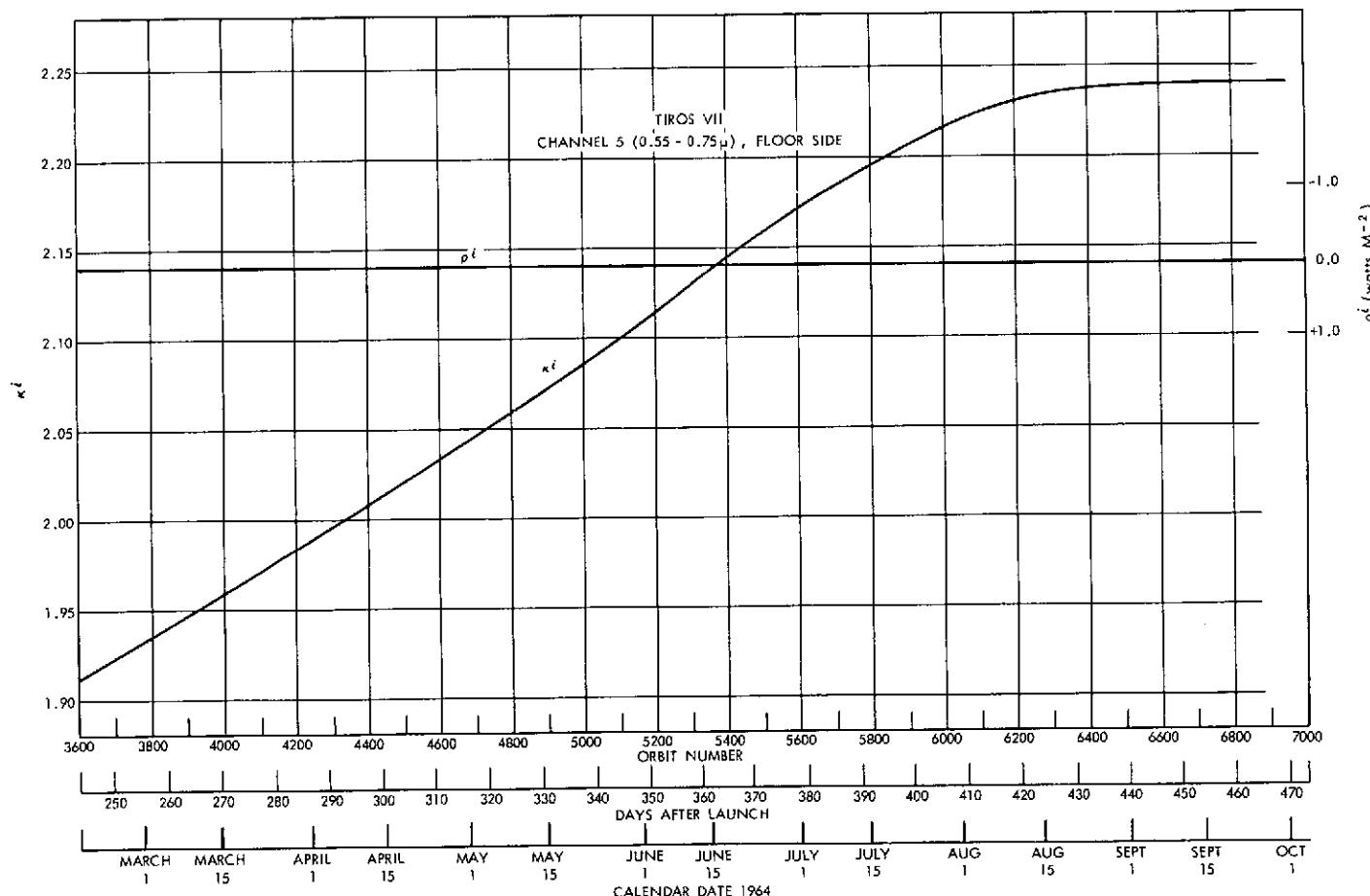


Figure 81—Normalizing parameters κ^i and ρ^i for channel 5. A measurement \bar{W}' should be corrected to yield \bar{W} by means of the equation $\bar{W} = \kappa^i (\bar{W}' + \rho^i)$.

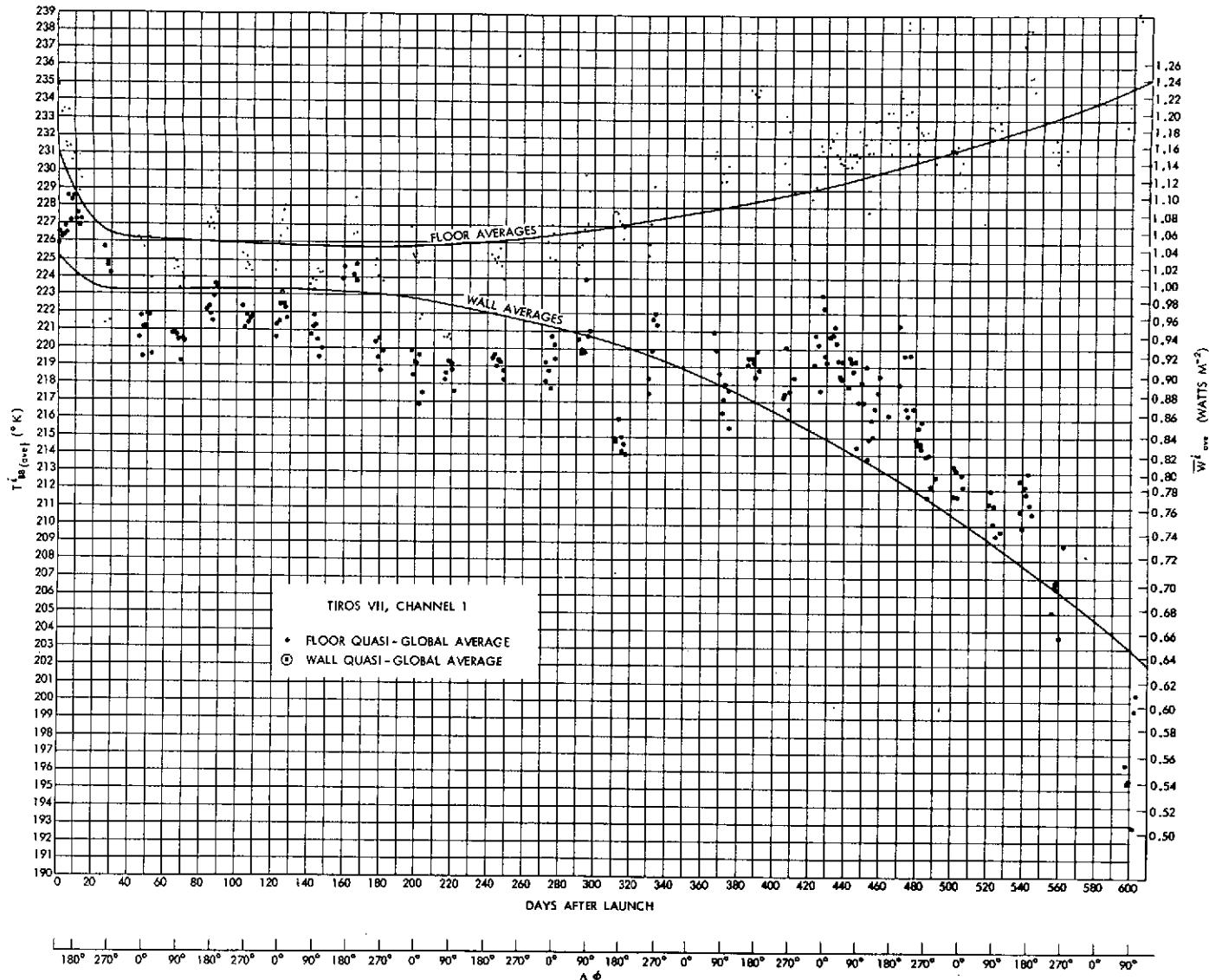


Figure 83—The average floor and wall quasi-global $T_{BB(ave)}^i$ and \overline{W}_{ave}^i values for channel 1 in latitude range 70° N to 70° S vs. days after launch.

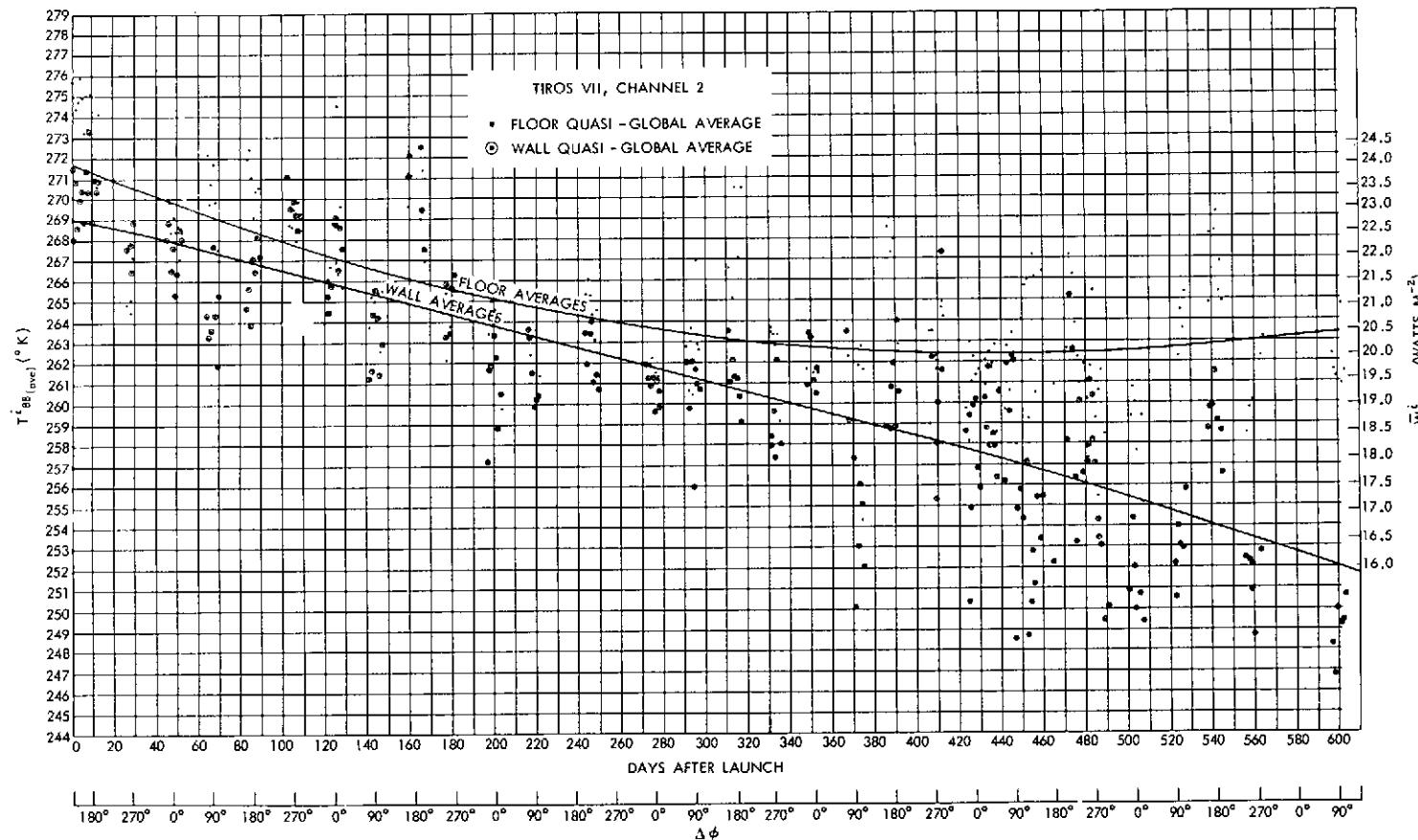


Figure 84—The average floor and wall quasi-global $T_{BB\text{ (ave)}}^i$ and \bar{W}_i^i values for channel 2 in latitude range 70°N to 70°S vs. days after launch.

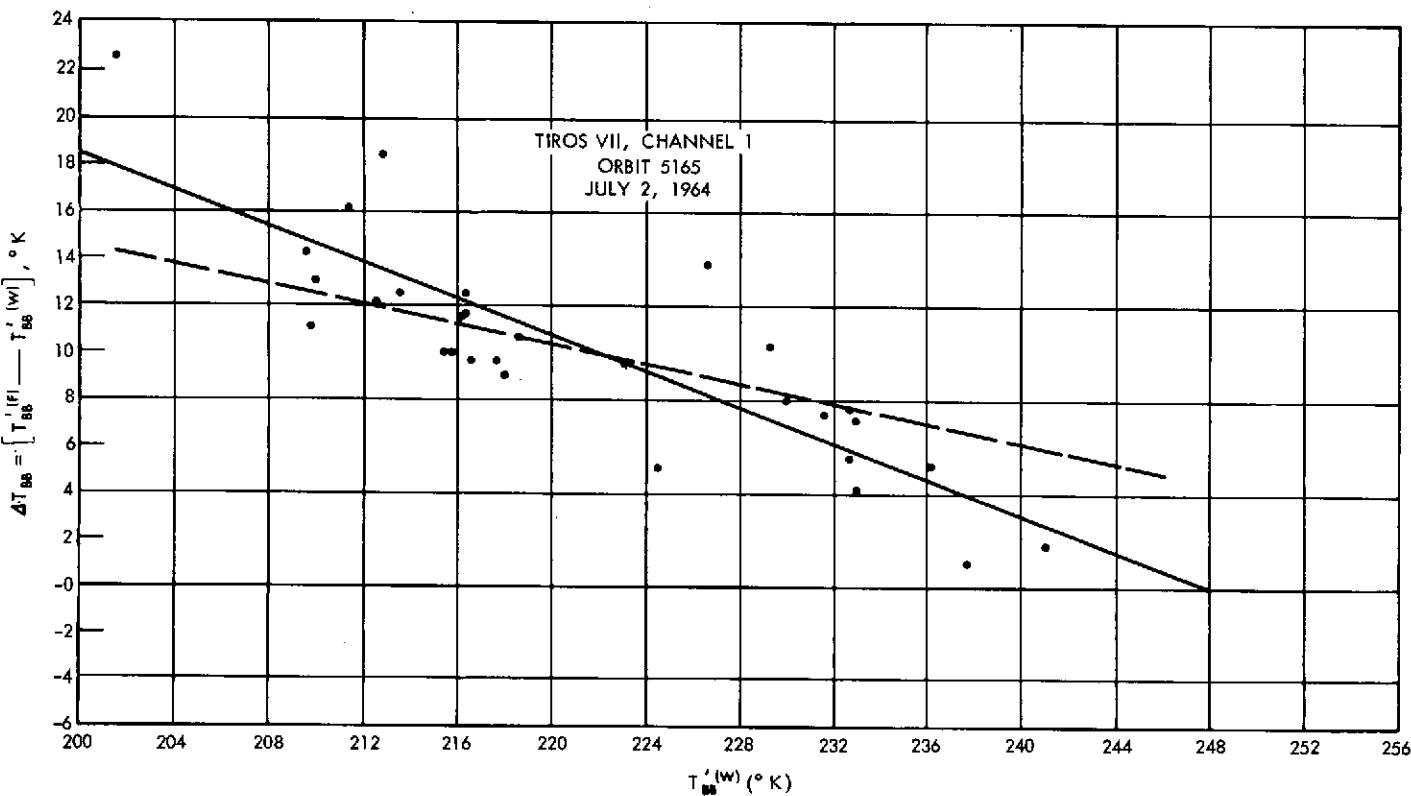


Figure 85—The difference between the floor and wall equivalent blackbody temperatures, ΔT_{BB} , vs. the wall equivalent blackbody temperatures, $T'_{BB}^{(W)}$. The plotted points are averaged measurements falling within a 5° latitude by 5° longitude area from the two alternating mode sectors of orbit 5165 on 2 July 1964. The solid line is a least-squares fit to the plotted points and the dashed line is derived from a solution of Equations (25) and (26) for $\Delta T_{BB} = 10^\circ C$, $T'_{BB}^{(W)} = 220^\circ K$, and $T_G = 277^\circ K$.

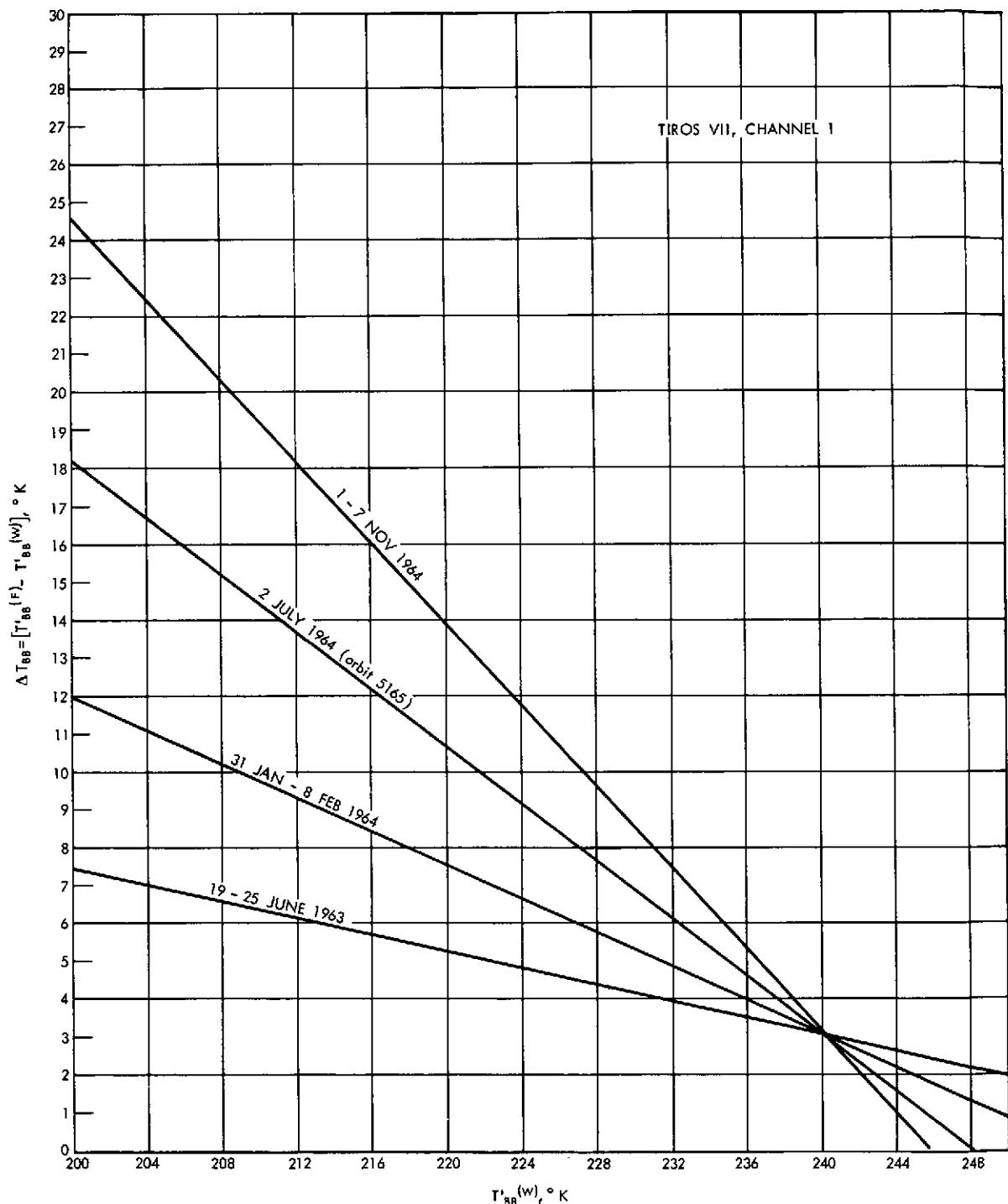


Figure 86—The difference between the floor and wall equivalent blackbody temperatures, ΔT_{BB} , vs. the wall equivalent blackbody temperatures, $T'_{BB}(W)$, for three weekly periods from computer listings and also orbit 5165 from a hand plot. The lines are least-squares fits to data representing the indicated times.

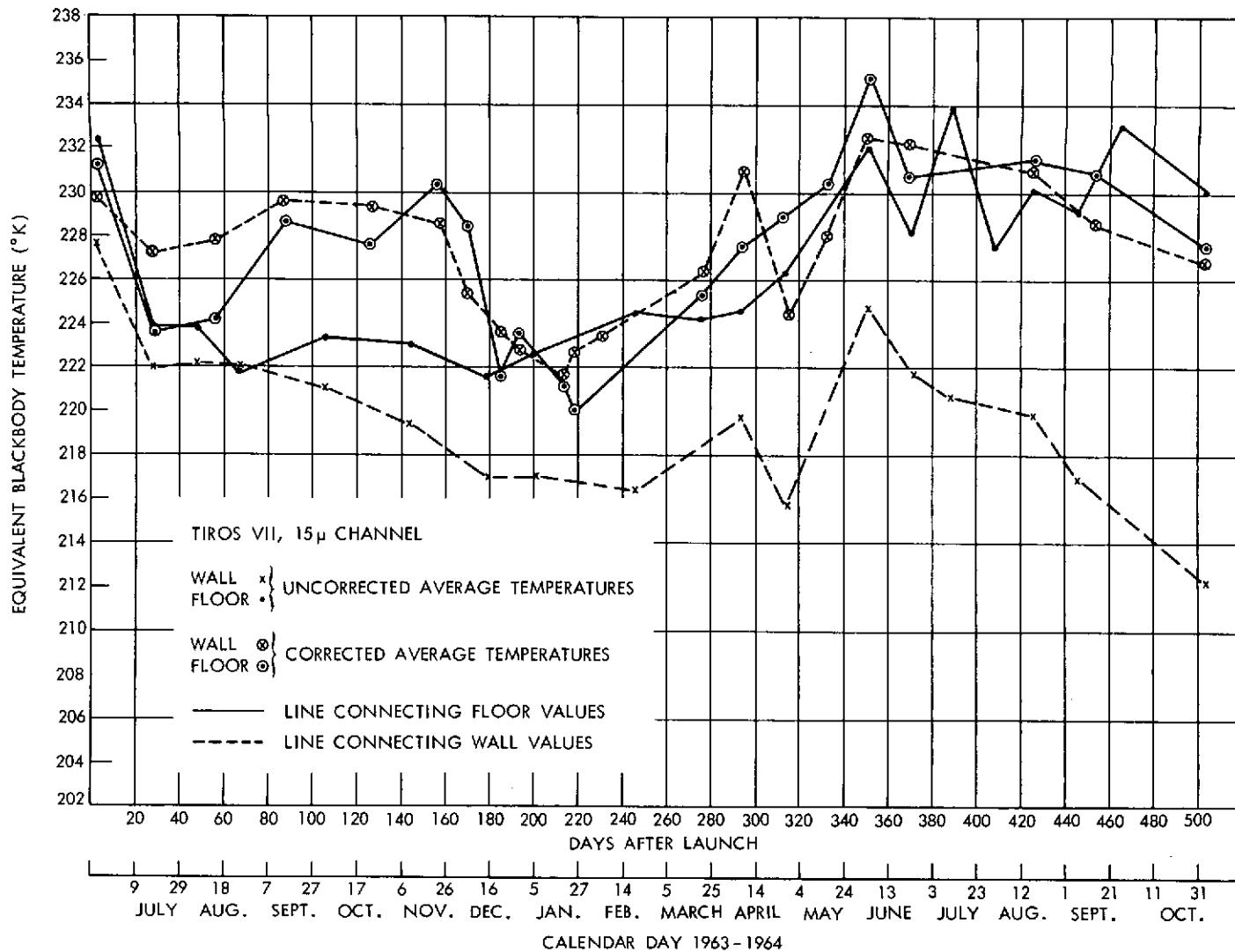


Figure 87—Weekly averages of the channel 1 floor and wall equivalent blackbody temperatures averaged around the zone between 10°N and 10°S vs. days after launch. Both the measured values and the values corrected by the degradation nomograms 77a and 77b are shown.

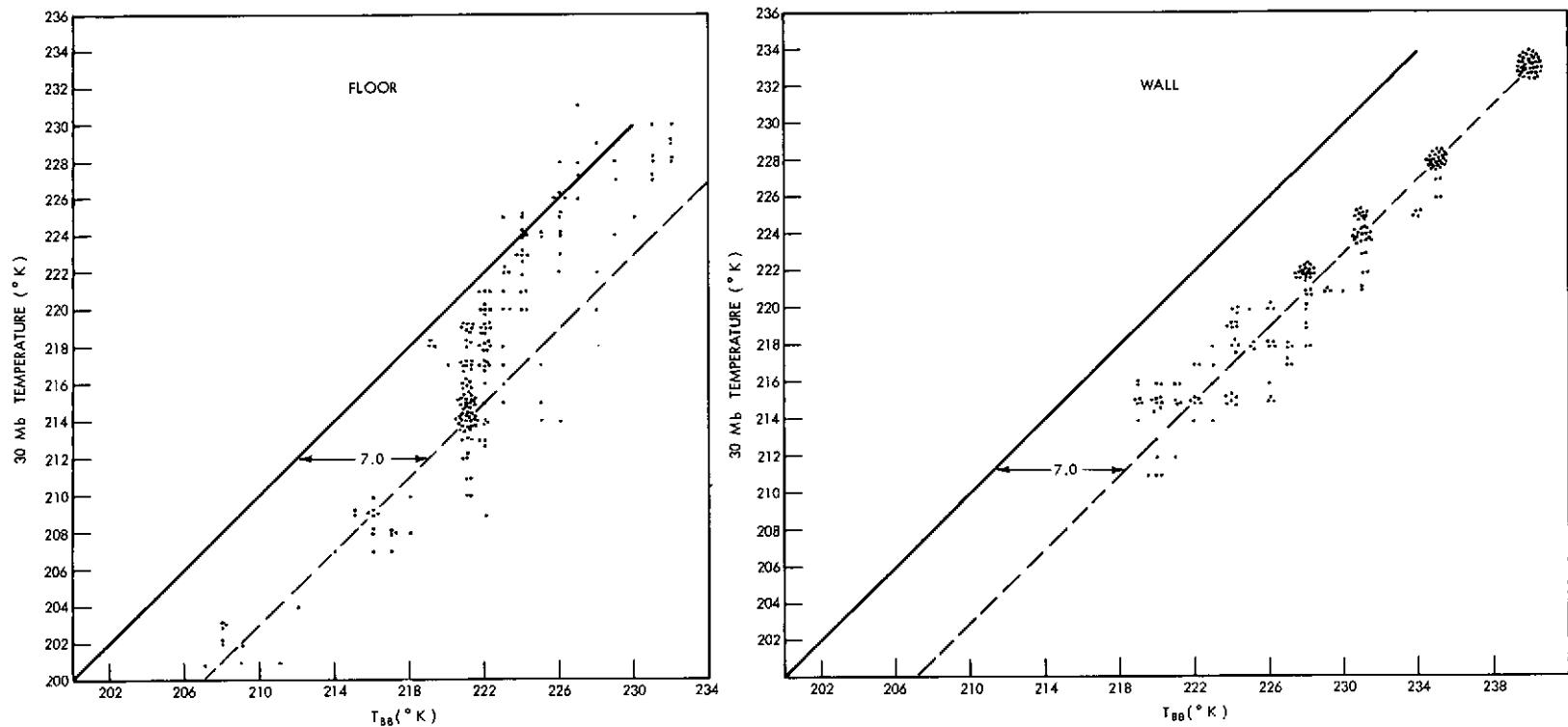


Figure 88—30 mb temperatures from radiosonde data vs. floor and wall channel 1 corrected equivalent blackbody temperatures for January 21-22, 1964.

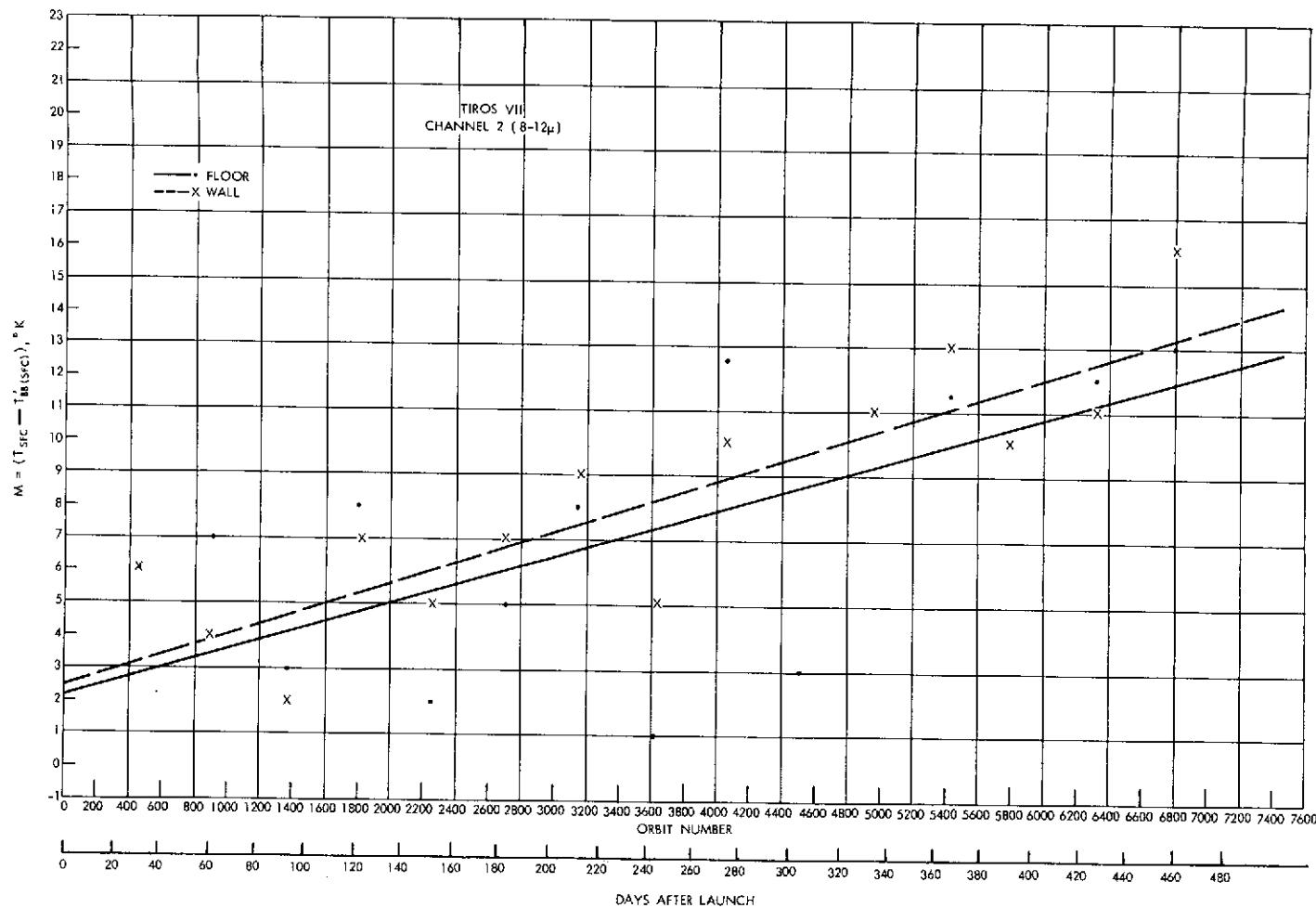


Figure 89—Deviations of channel 2 floor and wall measurements of surface temperatures (adjusted for atmospheric absorption), $T_{BH(SFC)}$, from assumed surface temperatures from an oceanographic atlas, T_{SFC} , vs. orbit number. Measurements were made over clear sky equatorial oceanic regions. Values of M tend to corroborate Figures 78a and b.

APPENDIX A
INDEX OF FINAL METEOROLOGICAL
RADIATION TAPES

One hundred and eighty-nine tapes, containing data from 747 individual orbits of TIROS VII from March 1, 1964 to September 30, 1964, are tabulated on the following pages. The FMR Tapes from this period are numbered from 585 to 788. The nomenclature used in the Index and an example illustrating the use of the Index is given in Appendix A, Volume 1.

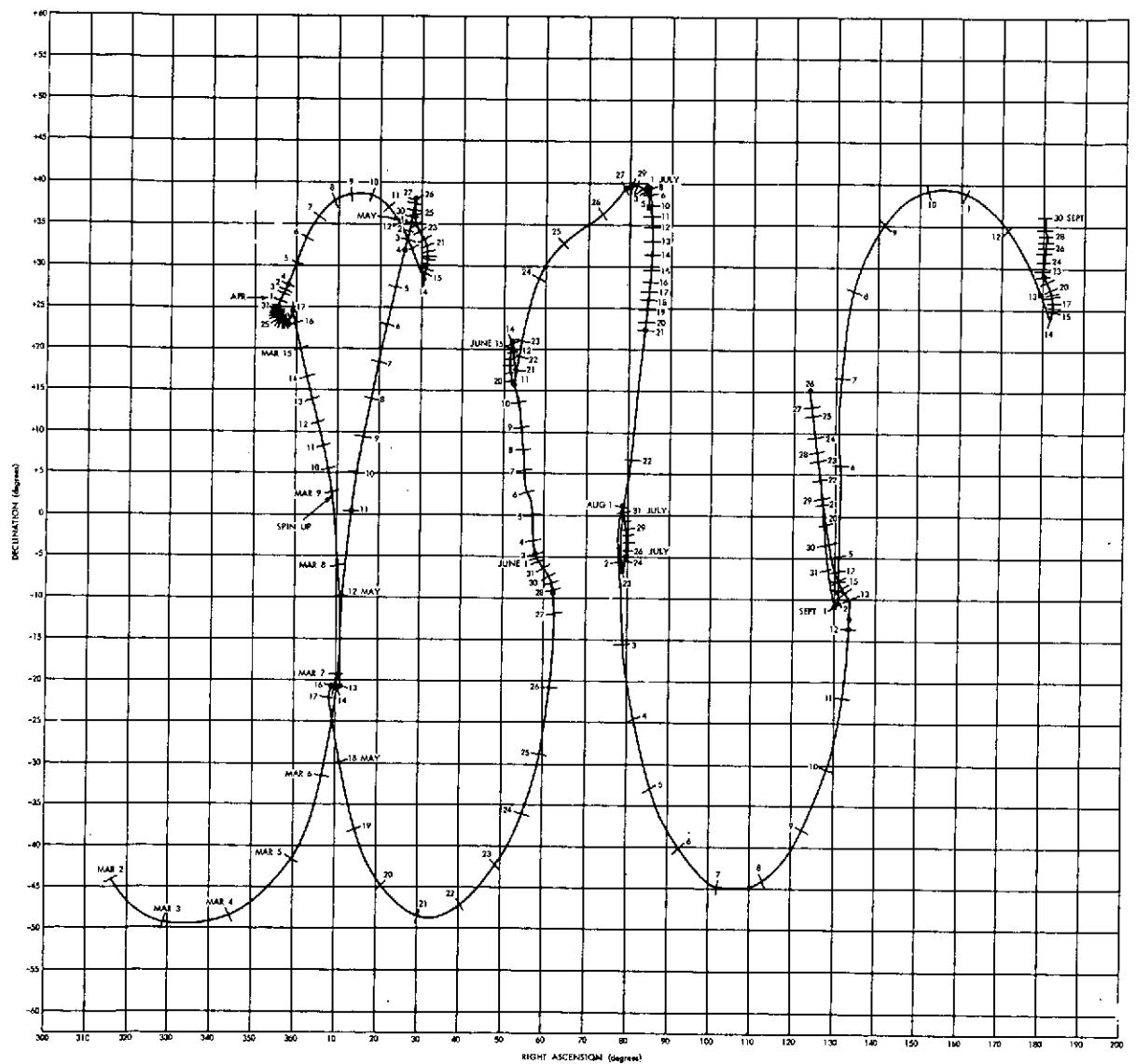


Figure A1—Observed motion of the TIROS VII spin vector on the celestial sphere. Each subdivision represents one day. Positions at 12 GMT each day are indicated.

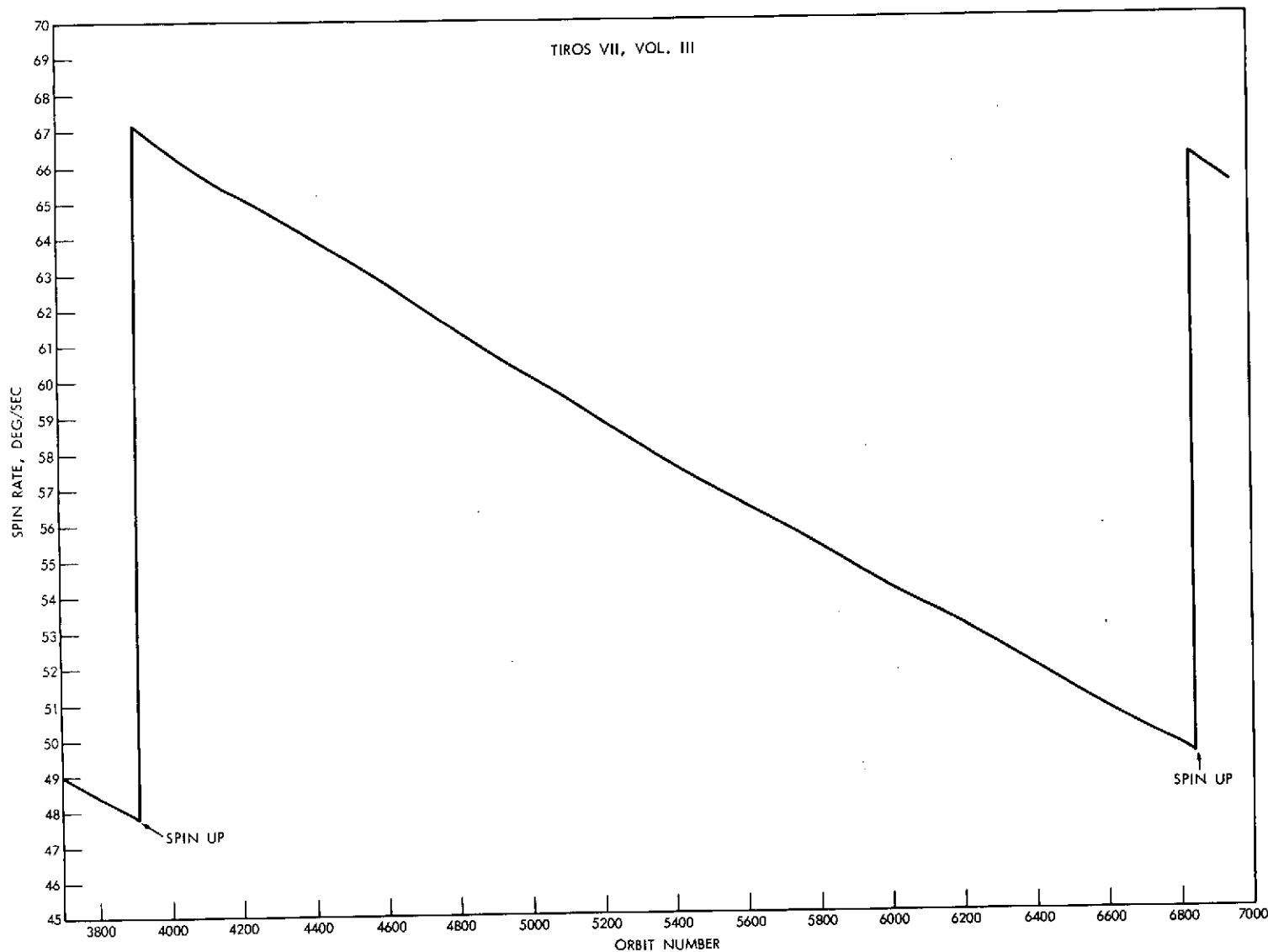


Figure A2—Time history of the TIROS VII spin rate.

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE					FMR TAPE REEL NO.
ORBIT NO.	COA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				/ SPIN- RATE (DEG /SEC)	BEGIN	E	N	D	DROPOUTS: MINUTES W/R/T ANO		FMR TAPE REEL NO.		
		EARTH LONGI -Tude (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -YUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO	FROM-	TO-				
3783	1	165.10	7*20*16	3/ 1/64	256	-35.8	303.7	-12.8	64.0	48.490	11.9	7*50* 3	29.8				585		
3784	1	140.43	8*57*40	3/ 1/64	256	-36.4	303.7	-12.5	64.2	48.484	12.3	9*31*33	33.9				585		
3786	2	91.09	12*12*29	3/ 1/64	256	-38.0	304.7	-11.7	64.6	48.473	13.2	12*48*33	36.1				585		
3798	1	155.02	7*41*21	3/ 2/64	257	-44.5	312.5	-9.8	67.5	48.406	14.0	8*12*33	31.2				586		
3799	1	130.35	9*18*45	3/ 2/64	257	-45.1	312.9	-9.6	67.6	48.401	14.0	9*53*33	34.8				586		
3813	1	144.91	8* 2*25	3/ 3/64	258	-49.5	326.4	-8.4	71.1	48.325	16.1	8*35*33	33.1				587		
3827	1	159.50	6*46* 6	3/ 4/64	259	-49.4	342.4	-8.4	74.6	48.250	17.0	7*16*33	30.5				588		
3828	1	134.83	8*23*30	3/ 4/64	259	-49.4	343.2	-8.4	74.7	48.244	18.0	8*57*33	34.1				588		
3830	2	85.48	11*38*19	3/ 4/64	259	-49.4	345.7	-8.1	75.2	48.234	18.4	12*14*33	36.2				588		
3838	1	-111.88	0*37*33	3/ 5/64	260	-45.7	355.7	-8.8	77.6	48.192	-29.8	0*49*33	12.0				589		
3839	2	-136.56	2*14*57	3/ 5/64	260	-45.2	356.2	-9.1	77.8	48.186	-73.3	2*23* 3	8.1				589		
3842	1	149.42	7* 7*10	3/ 5/64	260	-44.0	357.4	-9.8	78.4	48.171	-72.4	7*39*33	32.4				589		
3843	1	124.74	8*44*35	3/ 5/64	260	-43.8	358.1	-9.9	78.5	48.165	-56.1	9*20*33	36.0				589		
3844	3	100.07	10*21*59	3/ 5/64	260	-43.4	359.0	-9.9	78.7	48.160	-50.6	10*46*33	24.6				589		
3852	1	-97.30	23*21*14	3/ 5/64	260	-37.4	5.7	-11.3	81.2	48.119	-92.1	23*31* 3	9.8				590		
3853	1	-121.97	0*58*38	3/ 6/64	261	-36.6	5.9	-11.7	81.5	48.114	-75.7	1*12*33	13.9				590		
3854	2	-146.64	2*36* 2	3/ 6/64	261	-36.0	6.0	-12.2	81.7	48.108	-71.1	2*45*33	9.5				590		
3856	1	164.01	5*50*51	3/ 6/64	261	-34.8	6.2	-12.9	81.9	48.098	-63.1	6*21* 3	30.2				590		
3857	1	139.34	7*28*15	3/ 6/64	261	-34.4	6.4	-13.2	82.1	48.093	-56.1	8* 2*33	34.3				590		
3858	3	114.66	9* 5*39	3/ 6/64	261	-33.9	6.8	-13.3	82.2	48.088	-52.4	9*28*33	22.9				590		
3859	2	89.99	10*43* 4	3/ 6/64	261	-33.3	7.4	-13.4	82.4	48.083	-62.2	11*18*33	35.5				590		
3867	1	-107.38	23*42*18	3/ 6/64	261	-25.9	10.8	-15.7	84.9	48.042	-74.0	23*53*33	11.3				591		
3868	2	-132.05	1*19*42	3/ 7/64	262	-25.0	10.7	-16.3	85.1	48.037	-73.9	1*27* 3	7.4				591		
3869	2	-156.72	2*57* 7	3/ 7/64	262	-24.3	10.6	-16.8	85.3	48.032	-77.6	3* 8* 3	10.9				591		
3871	1	153.92	6*11*55	3/ 7/64	262	-23.1	10.3	-17.7	85.6	48.021	-73.1	6*43*33	31.6				591		
3872	1	129.25	7*49*20	3/ 7/64	262	-22.5	10.3	-18.1	85.7	48.016	-56.4	8*24*33	35.2				591		

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE					FMR TAPE REEL NO.
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	F N D		DROPOUTS, MINUTES W/R/T ANO					
		EARTH LONGI -TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TFS W/R/T ANO	FROM-	TO-				
3873	3	104.58	9*26*44	3/ 7/64	262	-21.9	10.5	-18.3	85.9	48.011	-51.3	9*50*33	23.8				591		
3874	2	79.91	11* 4* 8	3/ 7/64	262	-21.0	10.9	-18.5	86.1	48.006	-60.2	11*41* 3	36.9				591		
3881	1	-92.79	22*25*59	3/ 7/64	262	-13.9	12.2	-21.0	88.1	48.971	-87.8	22*35* 3	9.1				592		
3882	1	-117.46	0* 3*23	3/ 8/64	263	-13.0	11.9	-21.7	88.4	48.966	-34.5	0*16* 3	12.7				592		
3883	2	-142.13	1*40*47	3/ 8/64	263	-12.1	11.6	-22.3	88.6	48.961	-71.6	1*50* 3	9.3				592		
3886	1	143.84	6*33* 0	3/ 8/64	263	-10.2	10.6	-24.0	89.0	48.946	-60.0	7* 6*33	33.6				592		
3887	3	119.17	8*10*24	3/ 8/64	263	-9.5	10.4	-24.4	89.2	48.941	-51.5	8*33*33	23.2				592		
3888	2	94.50	9*47*49	3/ 8/64	263	-8.7	10.5	-24.8	89.3	48.936	24.6	10*22*33	34.7				592		
3896	1	-102.87	22*47* 3	3/ 8/64	263	-0.5	10.3	-28.2	91.6	48.896	-76.1	22*58* 3	11.0				593		
3897	2	-127.54	0*24*27	3/ 9/64	264	0.4	9.8	-28.9	91.8	48.891	-74.1	0*31* 3	6.6				593		
3900	1	158.43	5*16*40	3/ 9/64	264	1.7	9.0	-30.3	92.3	48.871	-64.4	5*48*33	31.9				593		
3901	1	133.76	6*54* 5	3/ 9/64	264	1.9	8.8	-30.4	92.3	48.871	-52.1	7*28*33	34.5				593		
3902	3	109.09	8*31*29	3/ 9/64	264	2.1	8.6	-30.5	92.4	48.866	-49.6	8*55*33	24.1				593		
3903	2	84.41	10* 8*53	3/ 9/64	264	2.4	8.5	-30.5	92.5	48.861	-60.0	10*45*33	36.7				593		
3911	1	-112.96	23* 8* 7	3/ 9/64	264	4.7	8.0	-30.7	93.4	67.159	-83.0	23*20*44	12.6				594		
3912	2	-137.64	0*45*32	3/10/64	265	4.9	7.9	-30.7	93.5	67.152	-73.3	0*54* 3	8.5				594		
3915	1	148.33	5*37*45	3/10/64	265	5.3	7.5	-30.6	93.6	67.130	-65.3	6*10*33	32.8				594		
3917	3	98.99	8*52*33	3/10/64	265	5.5	7.3	-30.5	93.7	67.116	-41.2	9*17*33	25.0				594		
3925	1	-98.37	21*51*47	3/10/64	265	7.2	6.9	-30.0	94.4	67.058	-90.5	22* 1*33	9.8				595		
3927	2	-147.72	1* 6*36	3/11/64	266	7.5	6.6	-30.0	94.6	67.043	-73.4	1*16* 3	9.5				595		
3929	1	162.92	4*21*25	3/11/64	266	7.8	6.4	-29.9	94.7	67.028	-63.2	4*51*33	30.1				595		
3930	1	138.25	5*58*49	3/11/64	266	7.9	6.2	-29.9	94.7	67.021	-55.1	6*32*33	33.7				595		
3931	3	113.58	7*36*13	3/11/64	266	8.0	6.1	-29.9	94.8	67.014	-50.8	7*59*33	23.3				595		
3932	2	88.91	9*13*38	3/11/64	266	8.2	6.1	-29.8	94.9	67.007	-61.5	9*48*33	34.9				595		
3941	2	-133.13	23*50*16	3/11/64	266	10.1	5.5	-29.3	95.6	66.940	-74.5	23*57*33	7.3				596		
3942	2	-157.80	1*27*40	3/12/64	267	10.2	5.3	-29.3	95.7	66.933	-77.8	1*38*33	10.9				596		

READOUT								ORBIT				TIME INTERVAL OF FILE ON FMR TAPE					FMR TAPE REEL NO.
ORBIT NO.	COA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN -NA	VECTOR ASCEN -TION (DEG)	ATTITUDE MINI -MUM NADIR (DEG)	TOT (MIN. AFTER AND)	SPIN RATE (DEG /SEC)	BEGIN	E	N	D	DROPOUTS, MINUTES W/R/T ANO	FMR TAPE REEL NO.	
		EARTH LONGI -TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY						MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO	FROM-	TO-		
3946	3	103.50	7*57*17	3/12/64	267	10.8	4.9	-29.2	95.9	66.903	-43.6	8*22*33	25.3			596	
3947	2	78.83	9*34*42	3/12/64	267	10.9	4.8	-29.1	96.0	66.896	-60.1	10*11*33	36.9			596	
3955	1	-118.54	22*33*56	3/12/64	267	12.7	4.2	-28.6	96.7	66.836	-76.9	22*46*33	12.6			597	
3956	2	-143.21	0*11*20	3/13/64	268	12.8	4.1	-28.6	96.8	66.829	-72.9	0*20* 3	8.7			597	
3959	1	142.76	5* 3*33	3/13/64	268	13.3	3.7	-28.6	96.9	66.807	-56.0	5*36*33	33.0			597	
3960	3	118.09	6*40*58	3/13/64	268	13.4	3.6	-28.5	96.9	66.799	-52.7	7* 5* 3	24.1			597	
3961	3	93.42	8*18*22	3/13/64	268	13.6	3.5	-28.5	97.0	66.792	-60.6	8*44*33	26.2			597	
3969	1	-103.95	21*17*36	3/13/64	268	15.3	3.0	-28.2	0.3	66.732	-78.0	21*28*33	11.0			598	
3970	2	-128.62	22*55* 0	3/13/64	268	15.5	2.9	-28.2	0.3	66.725	-73.4	23* 2* 3	7.1			598	
3971	2	-153.29	0*32*25	3/14/64	269	15.7	2.7	-28.1	0.4	66.717	-76.8	0*43* 3	10.6			598	
3973	1	157.35	3*47*13	3/14/64	269	16.0	2.4	-28.1	0.5	66.702	-62.1	4*18* 3	30.8			598	
3974	1	132.68	5*24*37	3/14/64	269	16.1	2.3	-28.1	0.6	66.695	-55.1	5*59*33	34.9			598	
3975	3	108.01	7* 2* 2	3/14/64	269	16.3	2.2	-28.0	0.7	66.687	-50.5	7*27*33	25.5			598	
3984	1	-114.03	21*38*40	3/14/64	269	18.3	1.6	-27.5	1.4	66.620	-38.3	21*51* 3	12.4			599	
3985	2	-138.71	23*16* 5	3/14/64	269	18.5	1.4	-27.5	1.4	66.613	-70.9	23*24* 3	8.0			599	
3988	1	147.27	4* 8*17	3/15/64	270	18.9	1.0	-27.4	1.6	66.590	-63.7	4*41*33	33.3			599	
3989	1	122.60	5*45*42	3/15/64	270	19.0	0.9	-27.4	1.7	66.583	-53.6	6*24* 3	38.4			599	
3990	2	97.93	7*23* 6	3/15/64	270	19.2	0.8	-27.3	1.7	66.575	-47.4	7*58*33	35.5			599	
3998	1	-99.44	20*22*20	3/15/64	270	21.1	0.3	-26.8	2.5	66.516	-63.2	20*32* 3	9.7			600	
3999	1	-124.11	21*59*44	3/15/64	270	21.3	0.2	-26.8	2.5	66.509	-76.3	22*13*33	13.8			600	
4000	2	-148.79	23*37* 9	3/15/64	270	21.4	0.	-26.8	2.5	66.501	-71.6	23*47* 3	9.9			600	
4002	1	161.86	2*51*57	3/16/64	271	21.7	359.8	-26.8	2.6	66.486	-64.2	3*23*33	31.6			600	
4003	1	137.19	4*29*21	3/16/64	271	21.9	359.7	-26.7	2.7	66.479	-55.2	5* 3*33	34.2			600	
4004	3	112.52	6* 6*46	3/16/64	271	22.1	359.6	-26.7	2.8	66.472	-51.1	6*31* 3	24.3			600	
4005	2	87.84	7*44*10	3/16/64	271	22.3	359.5	-26.6	2.8	66.464	-60.6	8*20*33	36.4			600	
4012	1	-84.85	19* 6* 0	3/16/64	271	23.9	359.1	-26.2	3.5	66.413	-87.8	19*13*33	7.6			601	

READOUT								ORBIT				TIME INTERVAL OF FILE ON FMR TAPE					FMR TAPE REEL NO.
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN E N D			DROPOUTS, MINUTES W/R/T ANO		FMR TAPE REEL NO.	
		EARTH LONGI TUDE (DEG)	HOURS MINUTES SECONOS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NAUDR (DEG)	TOT (MIN. AFTER ANO)		MINU -TES W/R/T ANO	HOURS MINUTES SECONOS (GMT)	MINU -TES W/R/T ANO	FROM-	TO-		
4014	2	-134.19	22*20*48	3/16/64	271	24.2	359.0	-26.1	3.6	66.398	-78.5	22*28*33	7.8			601	
4017	1	151.76	3*13* 1	3/17/64	272	24.1	359.0	-25.5	3.7	66.376	-67.0	3*46*33	33.5			601	
4018	1	127.09	4*50*26	3/17/64	272	24.1	358.9	-25.3	3.8	66.369	-53.8	5*25*33	35.1			601	
4019	3	102.41	6*27*50	3/17/64	272	24.1	358.9	-25.1	3.8	66.362	-34.5	6*54* 3	26.2			601	
4020	2	77.74	8* 5*14	3/17/64	272	24.0	358.9	-24.9	3.8	66.354	-59.5	8*42*33	37.3			601	
4027	1	-94.95	19*27* 4	3/17/64	272	23.8	358.6	-23.5	3.9	66.283	-63.5	19*36*33	9.5			602	
4028	1	-119.62	21* 4*28	3/17/64	272	23.8	358.6	-23.4	3.9	66.276	-76.6	21*17*33	13.1			602	
4029	2	-144.30	22*41*53	3/17/64	272	23.7	358.5	-23.2	3.9	66.269	-72.2	22*51* 3	9.2			602	
4031	1	166.35	1*56*41	3/18/64	273	23.7	358.4	-22.8	3.9	66.255	-64.9	2*27* 3	30.4			602	
4032	1	141.68	3*34* 5	3/18/64	273	23.7	358.4	-22.6	4.0	66.248	-45.9	4* 8*33	34.5			602	
4033	3	117.00	5*11*30	3/18/64	273	23.7	358.4	-22.4	4.0	66.240	-51.5	5*35*33	24.1			602	
4042	1	-105.03	19*48* 8	3/18/64	273	23.4	358.0	-20.7	4.2	66.177	-70.4	19*58*33	10.4			603	
4043	2	-129.70	21*25*32	3/18/64	273	23.4	358.0	-20.5	4.2	66.170	-75.0	21*33* 3	7.5			603	
4044	2	-154.38	23* 2*57	3/18/64	273	23.4	357.9	-20.4	4.2	66.163	-77.9	23*13*33	10.6			603	
4046	1	156.27	2*17*45	3/19/64	274	23.3	358.0	-19.9	4.2	66.149	-63.7	2*50* 3	32.3			603	
4047	1	131.60	3*55*10	3/19/64	274	23.3	357.9	-19.7	4.2	66.142	-54.6	4*29*33	34.4			603	
4048	3	106.92	5*32*34	3/19/64	274	23.3	357.9	-19.5	4.3	66.135	-52.4	5*57* 3	24.5			603	
4049	2	82.25	7* 9*58	3/19/64	274	23.3	357.9	-19.3	4.3	66.129	-61.2	7*46*33	36.6			603	
4056	1	-90.45	18*31*48	3/19/64	274	23.1	357.6	-18.0	4.5	66.081	-87.6	18*41* 3	9.3			604	
4057	1	-115.11	20* 9*12	3/19/64	274	23.1	357.6	-17.8	4.5	66.074	-76.4	20*22* 3	12.9			604	
4061	1	146.19	2*38*49	3/20/64	275	23.0	357.4	-17.1	4.6	66.047	-64.5	3*11*33	32.7			604	
4062	3	121.52	4*16*14	3/20/64	275	23.0	357.4	-16.9	4.6	66.041	-54.1	4*38*33	22.3			604	
4063	3	96.84	5*53*38	3/20/64	275	23.0	357.4	-16.7	4.7	66.034	-63.6	6*19*28	25.8			604	
4071	1	-100.53	18*52*52	3/20/64	275	22.9	357.1	-15.2	4.8	65.981	-86.9	19* 3* 3	10.2			605	
4072	1	-125.20	20*30*16	3/20/64	275	22.9	357.0	-15.0	4.8	65.974	-75.2	20*44*33	14.3			605	
4073	2	-149.87	22* 7*41	3/20/64	275	22.8	357.0	-14.9	4.8	65.968	-71.3	22*17*33	9.9			605	

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE						FMR TAPE REEL NO.
ORBIT NU.	LDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (AU)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	E N D		DROPOUTS, MINUTES W/R/T ADO						
		EARTH LONG -TITUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO	FROM-	TO-					
4130	1	-116.17	18*39*44	3/24/64	279	22.6	355.7	-4.2	6.5	65.609	-75.9	18*52*33	12.8							
4131	2	-146.84	20*17* 8	3/24/64	279	22.6	355.7	-4.1	6.5	65.603	-72.5	20*26* 3	8.9							609
4134	1	145.13	1* 9*21	3/25/64	280	22.6	355.6	-3.6	6.6	65.585	-17.9	1*42*33	33.2							609
4135	3	120.46	2*46*45	3/25/64	280	22.6	355.5	-3.4	6.6	65.579	-55.5	3* 9* 3	22.3							609
4136	2	95.79	4*24* 9	3/25/64	280	22.6	355.5	-3.2	6.6	65.573	-63.2	4*58*33	34.4							609
4144	1	-101.58	17*23*24	3/25/64	280	22.7	355.3	-1.9	6.9	65.524	-78.4	17*34* 3	10.7							610
4145	2	-126.25	19* 0*48	3/25/64	280	22.7	355.3	-1.7	7.0	65.518	-74.7	19* 7*33	6.8							610
4146	2	-156.92	20*38*12	3/25/64	280	22.7	355.3	-1.5	7.0	65.512	-78.6	20*48*33	10.4							610
4150	3	110.38	3* 7*49	3/26/64	281	22.8	355.2	-0.9	7.2	65.488	-51.9	3*32* 3	24.2							610
4151	2	85.71	4*45*13	3/26/64	281	22.8	355.1	-0.7	7.2	65.482	-61.5	5*21*33	36.3							610
4158	1	-86.98	16* 7* 3	3/26/64	281	22.9	355.1	0.6	7.4	65.437	-86.8	16*14*33	7.5							611
4159	1	-111.66	17*44*27	3/26/64	281	22.9	355.1	0.7	7.5	65.431	-77.3	17*56*33	12.1							611
4160	2	-136.33	19*21*52	3/26/64	281	23.0	355.1	0.9	7.5	65.425	-72.3	19*30* 3	8.2							611
4161	2	-161.00	20*59*16	3/26/64	281	23.0	355.0	1.1	7.5	65.419	-76.6	21*11* 3	11.8							611
4163	1	149.65	0*14* 4	3/27/64	282	23.0	355.0	1.4	7.6	65.407	-61.8	0*46*33	32.5							611
4164	1	124.98	1*51*29	3/27/64	282	23.1	355.0	1.5	7.7	65.401	-53.2	2*27*33	36.1							611
4165	3	100.30	3*28*53	3/27/64	282	23.1	354.9	1.7	7.7	65.395	-50.1	3*54* 3	25.2							611
4173	1	-97.06	16*28* 7	3/27/64	282	23.2	354.8	3.0	8.1	65.347	-91.9	16*38* 3	9.9							612
4174	1	-121.73	18* 5*31	3/27/64	282	23.3	354.8	3.2	8.1	65.341	-75.0	18*19* 3	13.5							612
4175	2	-146.40	19*42*56	3/27/64	282	23.3	354.8	3.3	8.2	65.334	-72.0	19*52* 3	9.1							612
4177	1	164.24	22*57*44	3/27/64	282	23.4	354.7	3.6	8.2	65.322	-63.9	23*28* 3	30.3							612
4178	1	139.57	0*35* 8	3/28/64	283	23.4	354.7	3.8	8.3	65.316	-52.6	1* 8*33	33.4							612
4179	3	114.90	2*12*33	3/28/64	283	23.4	354.7	3.9	8.2	65.310	-51.7	2*36* 3	23.5							612
4180	2	90.22	3*49*57	3/28/64	283	23.4	354.7	4.1	8.3	65.304	-59.9	4*25*33	35.6							612
4187	1	-82.47	15*11*47	3/28/64	283	23.6	354.7	5.3	8.6	65.262	-87.8	15*19*33	7.8							612
4188	1	-107.14	16*49*11	3/28/64	283	23.7	354.7	5.4	8.7	65.256	-78.0	17* 0* 3	10.9							613

READOUT												ORBIT				TIME INTERVAL OF FILE ON FMR TAPE					FMR TAPE REEL NO.
ORBIT 'NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	E N D	DROPOUTS, MINUTES W/R/T ANO		FROM-	TO-					
		EARTH LONGI -TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINT -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO								
4189	2	-131.81	18*26*35	3/28/64	283	23.7	354.7	5.6	8.7	65.250	-74.4	18*34* 3	7.5				613				
4194	3	104.82	2*33*37	3/29/64	284	23.8	354.8	6.5	9.0	65.220	-67.3	2*58* 3	24.4				613				
4195	2	80.15	4*11* 1	3/29/64	284	23.9	354.9	6.7	9.0	65.214	-60.4	4*47*33	36.5				613				
4202	1	-92.55	15*32*51	3/29/64	284	24.0	355.1	8.0	9.3	65.173	-87.3	15*42* 3	9.2				614				
4203	1	-117.22	17*10*15	3/29/64	284	24.0	355.1	8.2	9.4	65.167	-72.8	17*23* 3	12.8				614				
4204	2	-141.89	18*47*39	3/29/64	284	24.1	355.2	8.3	9.4	65.161	-72.7	18*56* 3	8.4				614				
4207	1	144.08	23*39*52	3/29/64	284	24.1	355.2	8.9	9.6	65.143	-58.9	0*12*33	32.7				614				
4208	3	119.41	1*17*16	3/30/64	285	24.1	355.3	9.1	9.6	65.137	-53.1	1*40* 3	22.8				614				
4209	2	94.74	2*54*40	3/30/64	285	24.2	355.3	9.3	9.7	65.131	21.0	3*29*33	34.9				614				
4217	1	-102.62	15*53*54	3/30/64	285	24.4	355.6	10.7	10.2	65.083	-74.5	16* 4* 3	10.2				615				
4218	2	-127.30	17*31*18	3/30/64	285	24.4	355.6	10.9	10.2	65.077	-73.1	17*38* 3	6.8				615				
4219	2	-151.96	19* 8*43	3/30/64	285	24.4	355.6	11.0	10.3	65.071	-77.3	19*19* -3	10.3				615				
4221	1	158.68	22*23*31	3/30/64	285	24.5	355.7	11.4	10.4	65.059	-61.6	22*54*33	31.0				615				
4222	1	133.97	0* 0*56	3/31/64	286	24.5	355.7	11.6	10.4	65.053	-54.8	0*35*33	34.6				615				
4223	3	109.31	1*38*20	3/31/64	286	24.5	355.8	11.8	10.5	65.048	-52.3	2* 2* 3	23.7				615				
4224	2	84.63	3*15*44	3/31/64	286	24.6	355.9	12.0	10.6	65.042	-61.7	3*51*33	35.8				615				
4231	1	-88.06	14*37*34	3/31/64	286	24.8	356.1	13.1	10.9	65.000	-88.4	14*46* 3	8.5				616				
4232	1	-112.73	16*14*58	3/31/64	286	24.8	356.2	13.3	11.0	64.994	-77.2	16*27* 3	12.1				616				
4233	2	-137.41	17*52*22	3/31/64	286	24.9	356.2	13.5	11.0	64.988	-73.2	18* 1* 3	8.7				616				
4236	1	148.57	22*44*35	3/31/64	286	24.9	356.3	14.0	11.2	64.970	-64.4	23*16*33	32.0				616				
4237	1	123.90	0*21*59	4/ 1/64	287	24.9	356.3	14.1	11.3	64.965	-53.8	0*58* 3	36.1				616				
4238	3	99.22	1*59*24	4/ 1/64	287	25.0	356.4	14.3	11.3	64.959	-50.3	2*24*33	25.2				616				
4246	1	-98.14	14*58*38	4/ 1/64	287	25.2	356.7	15.6	11.9	64.911	-89.6	15* 8*33	9.9				617				
4247	1	-122.81	16*36* 2	4/ 1/64	287	25.3	356.7	15.7	11.9	64.905	-75.0	16*49*33	13.5				617				
4248	2	-147.48	18*13*26	4/ 1/64	287	25.3	356.8	15.9	12.0	64.900	-70.4	18*23* 3	9.6				617				
4250	1	163.16	21*28*15	4/ 1/64	287	25.3	356.8	16.2	12.0	64.888	-62.0	21*58*33	30.3				617				

ORBIT NO.	CDA STA	READOUT						ORBIT						TIME INTERVAL OF FILE ON FMR TAPE						FMR TAPE REEL NO.
		SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				BEGIN	E N D			DROPOUTS, MINUTES W/R/T ANO						
		EARTH LONGI -TUDU (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		SPIN RATE (DEG /SEC)	MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO	FROM-	TO-				
4251	3	138.49	23* 5*39	4/ 1/64	287	25.3	357.0	16.4	12.1	64.882	-55.7	23*26*33	20.9					617		
4252	3	113.82	0*43* 3	4/ 2/64	288	25.4	357.0	16.6	12.2	64.876	-64.3	1* 6*33	23.5					617		
4253	2	89.15	2*20*27	4/ 2/64	288	25.4	357.1	16.7	12.2	64.870	-60.3	2*55*33	35.1					617		
4260	1	-83.55	13*42*17	4/ 2/64	288	25.6	357.4	17.8	12.7	64.829	-84.4	13*50*33	8.3					618		
4261	1	-108.22	15*19*41	4/ 2/64	288	25.6	357.4	18.0	12.8	64.823	-77.2	15*30* 3	10.4					618		
4262	2	-132.89	16*57* 6	4/ 2/64	288	25.7	357.5	18.1	12.8	64.817	-75.0	17* 4*33	7.5					618		
4263	2	-157.56	18*34*30	4/ 2/64	288	25.7	357.5	18.3	12.9	64.811	-77.4	18*45*33	11.1					618		
4265	3	153.08	21*49*18	4/ 2/64	288	25.7	357.6	18.6	13.0	64.800	-63.1	22* 8*33	19.3					618		
4266	3	128.41	23*26*43	4/ 2/64	288	25.7	357.6	18.7	13.1	64.794	-65.9	23*49* 3	22.3					618		
4267	3	103.74	1* 4* 7	4/ 3/64	289	25.8	357.7	18.9	13.2	64.788	-62.4	1*28*33	24.4					618		
4268	2	79.07	2*41*31	4/ 3/64	289	25.8	357.7	19.0	13.2	64.782	-57.1	3*18*33	37.0					618		
4275	1	-93.62	14* 3*21	4/ 3/64	289	26.0	358.1	20.0	13.6	64.741	-86.6	14*11*33	8.2					619		
4276	1	-118.30	15*40*45	4/ 3/64	289	26.0	358.1	20.2	13.7	64.735	-76.8	15*53* 3	12.3					619		
4277	2	-142.97	17*18* 9	4/ 3/64	289	26.0	358.2	20.3	13.8	64.729	-71.9	17*27* 3	8.9					619		
4279	1	167.67	20*32*58	4/ 3/64	289	26.1	358.3	20.7	13.9	64.717	-64.6	21* 2*33	29.6					619		
4280	3	143.00	22*10*22	4/ 3/64	289	26.1	358.4	20.8	14.0	64.712	-56.1	22*31* 3	20.7					619		
4281	3	118.33	23*47*46	4/ 3/64	289	26.1	358.4	20.9	14.1	64.706	-64.1	0*10*33	22.8					619		
4291	2	-128.38	16* 1*49	4/ 4/64	290	26.6	358.9	22.2	14.8	64.643	-81.6	16* 8*33	6.7					620		
4292	2	-153.05	17*39*13	4/ 4/64	290	26.7	358.9	22.2	14.9	64.637	-78.3	17*50* 3	10.8					620		
4294	3	157.60	20*54* 0	4/ 4/64	290	27.0	359.0	22.4	15.1	64.626	-63.4	21*12*33	18.6					620		
4295	3	132.93	22*31*26	4/ 4/64	290	27.4	359.1	22.3	15.2	64.620	-67.0	22*52*33	21.1					620		
4296	3	108.26	0* 8*50	4/ 5/64	291	27.7	359.2	22.1	15.3	64.614	-64.6	0*32*33	23.7					620		
4297	2	83.58	1*46*14	4/ 5/64	291	28.0	359.3	21.9	15.4	64.608	-61.8	2*22*33	36.3					620		
4304	1	-89.11	13* 8* 4	4/ 5/64	291	29.7	0.3	21.7	16.2	64.568	-87.9	13*16* 3	8.0					621		
4305	1	-113.78	14*45*28	4/ 5/64	291	29.9	0.4	21.7	16.4	64.562	-78.2	14*57* 3	11.6					621		
4306	2	-138.46	16*22*52	4/ 5/64	291	30.2	0.5	21.6	16.5	64.556	-74.6	16*30* 3	7.2					621		

READOUT										ORBIT					FMR TAPE REEL NO.	
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN DECLI- -NA -TION (DEG)	VECTOR RIGHT ASCEN- -SION (DEG)	ATTITUDE MINI- -MUM NADIR (DEG)	TOT [MIN. AFTER ANO]	SPIN RATE (DEG /SEC)	BEGIN	E N O	DROPOUTS, MINUTES W/R/T ANO			
		EARTH LONGI- -TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY						MINU- -TES W/R/T ANO	HOURLS MINUTES SECONDS (GMT)	MINU- -TES W/R/T ANO			
4307	2	-163.13	18* 0*16	4/ 5/64	291	30.4	0.7	21.6	16.6	64.550	-77.3	18*14*33	14.3		621	
4309	3	147.52	21*15* 5	4/ 5/64	291	31.0	0.8	21.4	16.9	64.539	-59.8	21*34*33	19.5		621	
4310	3	122.95	22*52*29	4/ 5/64	291	31.3	0.9	21.3	17.0	64.533	-66.8	23*14*33	22.1		621	
4311	3	98.17	0*29*53	4/ 6/64	292	31.6	1.0	21.1	17.1	64.527	-64.0	0*54*33	24.7		621	
4319	1	-99.19	13*29* 7	4/ 6/64	292	33.2	2.7	20.8	18.1	64.482	-86.9	13*39* 3	9.9		622	
4320	1	-123.86	15* 6*32	4/ 6/64	292	33.4	3.0	20.8	18.3	64.476	-75.1	15*20*33	14.0		622	
4321	2	-148.53	16*43*56	4/ 6/64	292	33.6	3.2	20.8	18.4	64.470	-71.4	16*54* 3	10.1		622	
4323	1	162.11	19*58*44	4/ 6/64	292	34.1	3.5	20.7	18.7	64.459	-63.0	20*29*33	30.8		622	
4324	3	137.44	21*36* 9	4/ 6/64	292	34.3	3.6	20.6	18.7	64.453	-55.2	21*57*33	21.4		622	
4325	3	112.77	23*13*33	4/ 6/64	292	34.6	3.7	20.4	18.8	64.447	-65.2	23*37* 3	23.5		622	
4326	2	88.09	0*50*57	4/ 7/64	293	34.9	4.0	20.3	18.9	64.442	-62.6	1*26*33	35.6		622	
4333	1	-84.61	12*12*47	4/ 7/64	293	36.1	5.8	20.0	19.9	64.402	-88.6	12*20*33	7.8		623	
4335	2	-133.95	15*27*35	4/ 7/64	293	36.4	6.4	19.9	20.1	64.391	-71.1	15*35*33	8.0		623	
4336	2	-158.62	17* 5* 0	4/ 7/64	293	36.6	6.6	19.9	20.3	64.385	-76.0	17*16*33	11.6		623	
4338	3	152.03	20*19*48	4/ 7/64	293	37.0	6.9	19.7	20.5	64.374	-63.0	20*38*33	18.8		623	
4339	3	127.35	21*57*12	4/ 7/64	293	37.2	7.1	19.6	20.6	64.368	-66.5	22*20*33	23.4		623	
4341	2	78.01	1*12* 1	4/ 8/64	294	37.7	7.5	19.3	20.8	64.357	-58.4	1*49*33	37.5		623	
4349	1	-119.35	14*11*15	4/ 8/64	294	38.0	10.1	19.5	21.8	64.312	-80.1	14*24* 3	12.8		624	
4353	3	141.94	20*40*52	4/ 8/64	294	38.2	11.1	19.7	22.3	64.289	-52.2	21* 0*33	19.7		624	
4354	3	117.28	22*18*16	4/ 8/64	294	38.4	11.3	19.6	22.4	64.283	-55.6	22*41* 3	22.8		624	
4363	1	-104.76	12*54*53	4/ 9/64	295	38.5	14.5	19.6	23.7	64.232	-79.2	13* 4*33	9.7		625	
4364	2	-129.43	14*32*18	4/ 9/64	295	38.5	14.8	19.7	23.8	64.227	-73.9	14*38*33	6.3		625	
4367	3	156.54	19*24*31	4/ 9/64	295	38.5	15.3	19.7	24.1	64.210	-68.6	19*43* 3	18.5		625	
4368	3	131.87	21* 1*55	4/ 9/64	295	38.6	15.5	19.7	24.2	64.204	-66.8	21*23*33	21.6		625	
4369	3	107.20	22*39*19	4/ 9/64	295	38.7	15.8	19.6	24.3	64.198	-65.1	23* 3* 3	23.7		625	
4370	2	82.53	0*16*44	4/10/64	296	38.7	16.2	19.5	24.4	64.193	-62.7	0*53* 3	36.3		625	

READOUT										ORBIT					FMR TAPE REEL NO.
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	REGIN	E N D	DROPOUTS, MINUTES W/R/T ANO		
		EARTH LUNG1 -TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO	FROM-	TO-
4377	1	-90.17	11*38*33	4/10/64	296	38.4	18.7	19.5	25.3	64.153	-26.3	11*47* 3	8.5		626
4379	2	-139.51	14*53*22	4/10/64	296	38.2	19.1	19.7	25.6	64.141	-73.8	15* 0*33	7.2		626
4382	3	146.46	19*45*35	4/10/64	296	38.1	19.6	19.7	25.9	64.124	-64.6	20* 5* 3	19.5		626
4383	3	121.79	21*22*59	4/10/64	296	38.2	19.9	19.7	26.0	64.119	-66.5	21*45* 3	22.1		626
4384	2	97.12	23* 0*23	4/10/64	296	38.2	20.2	19.6	26.1	64.113	-63.3	23*35* 3	34.7		626
4392	1	-100.25	11*59*37	4/11/64	297	37.3	22.9	19.7	27.2	64.067	-76.3	12* 8*33	8.9		627
4394	2	-149.59	15*14*25	4/11/64	297	37.0	23.3	19.8	27.5	64.055	-74.7	15*23*33	9.1		627
4396	1	161.06	18*29*14	4/11/64	297	36.8	23.5	19.9	27.7	64.044	-64.3	18*59*33	30.3		627
4397	3	136.38	20* 6*38	4/11/64	297	36.8	23.7	19.9	27.8	64.038	-55.6	20*27*33	20.9		627
4398	3	111.72	21*44* 2	4/11/64	297	36.8	24.0	19.9	27.8	64.032	-64.0	22* 8*33	24.5		627
4399	2	87.04	23*21*27	4/11/64	297	36.7	24.3	19.8	27.9	64.026	-59.7	23*58* 3	36.6		627
4406	1	-85.65	10*43*16	4/12/64	298	35.5	26.6	19.8	28.9	63.988	-85.4	10*51* 3	7.8		628
4408	2	-134.99	13*58* 5	4/12/64	298	35.1	26.9	20.0	29.2	63.976	-74.9	14* 5*33	7.5		628
4409	2	-159.67	15*35*29	4/12/64	298	35.0	27.0	20.1	29.3	63.970	-77.9	15*47* 3	11.6		628
4411	3	150.98	18*50*17	4/12/64	298	34.7	27.2	20.1	29.5	63.959	-61.7	19* 9*33	19.3		628
4412	3	126.31	20*27*42	4/12/64	298	34.6	27.4	20.1	29.6	63.953	-66.5	20*49*33	21.9		628
4413	3	101.64	22*-5* 6	4/12/64	298	34.5	27.7	20.1	29.7	63.947	-64.7	22*30*33	25.5		628
4421	1	-95.72	11* 4*20	4/13/64	299	32.8	29.8	20.1	30.8	63.899	-15.7	11*12*33	8.2		629
4423	2	-145.07	14*19* 8	4/13/64	299	32.4	30.0	20.3	31.1	63.887	-71.7	14*27*33	8.4		629
4426	3	140.90	19*11*21	4/13/64	299	31.9	30.3	20.4	31.3	63.869	-55.8	19*31*33	20.2		629
4427	3	116.23	20*48*45	4/13/64	299	31.8	30.4	20.4	31.4	63.863	-66.9	21*12*33	23.8		629
4428	2	91.56	22*26*10	4/13/64	299	31.6	30.7	20.4	31.5	63.857	-62.3	23* 2* 3	35.9		629
4437	2	-130.50	13* 2*43	4/14/64	300	29.5	32.3	20.5	32.8	63.803	-76.8	13* 9*33	6.8		630
4438	2	-155.17	14*40* 8	4/14/64	300	29.5	32.3	20.5	32.8	63.797	-78.2	14*50*33	10.4		630
4440	3	155.48	17*54*56	4/14/64	300	29.5	32.4	20.3	33.0	63.785	-62.5	18*13*33	18.6		630
4441	3	130.81	19*32*20	4/14/64	300	29.5	32.4	20.1	33.0	63.779	-67.3	19*53*33	21.2		630

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE						FMR TAPE REEL NO.
ORBIT NO.	COA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN		E N D		DROPOUTS, MINUTES W/R/T ANO		FMR TAPE REEL NO.			
		EARTH LONGI- TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI- -NA -TION (DEG)	RIGHT ASCEN- -SION (DEG)	MINI- -MUM NADIR (DEG)	TOT. (MIN. AFTER ANO)		MINU- -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU- -TES W/R/T ANO	FROM-	TO-					
4442	3	106.13	21* 9*45	4/14/64	300	29.5	32.4	20.0	33.1	63.773	-65.4	21*34*33	24.8				630			
4443	2	81.46	22*47* 9	4/14/64	300	29.5	32.4	19.9	33.1	63.767	-60.1	23*24* 3	36.9				630			
4452	2	-140.57	13*23*47	4/15/64	301	29.6	32.4	18.7	33.6	63.712	-71.3	13*32* 3	8.3				631			
4455	3	145.40	18*16* 0	4/15/64	301	29.6	32.5	18.3	33.8	63.694	-69.1	18*36*57	21.0				631			
4456	3	120.73	19*53*24	4/15/64	301	29.6	32.5	18.2	33.8	63.688	-64.0	20*15*33	22.2				631			
4457	3	96.06	21*30*49	4/15/64	301	29.6	32.5	18.0	33.9	63.682	-62.8	21*56* 3	25.2				631			
4466	2	-125.98	12* 7*27	4/16/64	302	29.8	32.4	16.8	34.2	63.626	-75.1	12*13*33	6.1				632			
4467	2	-150.65	13*44*51	4/16/64	302	29.8	32.5	16.7	34.3	63.620	-79.4	13*54*33	9.7				632			
4469	3	159.99	16*59*40	4/16/64	302	29.8	32.5	16.4	34.4	63.608	-62.8	17*18* 3	18.4				632			
4470	3	135.33	18*37* 4	4/16/64	302	29.8	32.5	16.2	34.4	63.602	-66.5	18*57*33	20.5				632			
4471	3	110.65	20*14*28	4/16/64	302	29.8	32.5	16.1	34.5	63.595	-65.6	20*39* 3	24.6				632			
4472	2	85.95	21*51*53	4/16/64	302	29.8	32.5	15.9	34.5	63.589	-60.1	22*28*33	36.7				632			
4481	2	-136.06	12*28*31	4/17/64	303	30.0	32.4	14.6	35.0	63.534	-73.5	12*36*33	8.0				633			
4483	3	174.59	15*43*19	4/17/64	303	30.1	32.4	14.3	35.1	63.521	-72.7	16* 1*33	18.2				633			
4484	3	149.92	17*20*44	4/17/64	303	30.1	32.4	14.1	35.1	63.515	-67.0	17*40*33	19.8				633			
4485	3	125.24	18*58* 8	4/17/64	303	30.1	32.4	14.0	35.2	63.509	-66.2	19*20*33	22.4				633			
4486	3	100.57	20*35*32	4/17/64	303	30.1	32.4	13.8	35.2	63.502	-64.0	21* 0*33	25.0				633			
4494	1	-96.79	9*34*46	4/18/64	304	30.4	32.2	12.6	35.4	63.452	-68.1	9*44* 3	9.3				634			
4496	2	-146.14	12*49*35	4/18/64	304	30.4	32.2	12.3	35.5	63.440	-70.0	12*59* 3	9.5				634			
4499	3	139.84	17*41*48	4/18/64	304	30.5	32.2	11.8	35.7	63.421	-45.5	18* 2*33	20.8				634			
4500	3	115.17	19*19*12	4/18/64	304	30.5	32.2	11.6	35.7	63.415	-64.3	19*43* 3	23.9				634			
4501	2	90.50	20*56*36	4/18/64	304	30.5	32.2	11.5	35.8	63.408	-60.8	21*33* 3	36.5				634			
4510	2	-131.54	11*33*14	4/19/64	305	30.9	32.0	10.0	36.1	63.352	-74.5	11*40* 3	6.8				635			
4513	3	154.43	16*25*27	4/19/64	305	31.0	32.0	9.5	36.1	63.333	-55.5	16*44* 3	18.6				635			
4515	3	105.09	19*40*16	4/19/64	305	31.0	32.0	9.1	36.2	63.320	-69.8	20* 5*33	25.3				635			
4516	2	80.42	21*17*40	4/19/64	305	31.1	31.9	9.0	36.2	63.314	-60.7	21*54*33	36.9				635			

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE							FMR TAPE REEL NO.
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (AND)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN E N D			DROPOUTS, MINUTES W/R/T AND							
		EARTH LONGI -TUE (DEGI)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEGI)	RIGHT ASCEN -SION (DEGI)	MINI -MUM NADIR (DEGI)	TOT (MIN. AFTER AND)		MINU -TES W/R/T ANO	MINU -TES W/R/T ANO	FROM-	TO-							
4525	2	-141.61	11*54*18	4/20/64	306	31.6	31.7	7.4	36.5	63.256	-33.6	12* 2* 3	7.8						636		
4528	3	144.36	16*46*31	4/20/64	306	31.7	31.7	6.9	36.6	63.237	-61.1	17* 6*33	20.0						636		
4529	3	119.68	18*23*55	4/20/64	306	31.7	31.7	6.7	36.7	63.231	-66.2	18*47*33	23.6						636		
4530	2	95.02	20* 1*19	4/20/64	306	31.8	31.6	6.5	36.7	63.224	-61.2	20*37* 3	35.7						636		
4539	2	-127.05	10*37*58	4/21/64	307	32.3	31.3	4.9	36.8	63.166	-75.8	10*44*33	6.6						637		
4540	2	-151.72	12*15*22	4/21/64	307	32.4	31.3	4.7	36.9	63.160	-79.9	12*25* 3	9.7						637		
4542	3	158.92	15*30*10	4/21/64	307	32.5	31.3	4.4	36.9	63.147	-64.4	15*48*33	18.4						637		
4543	3	134.25	17* 7*35	4/21/64	307	32.5	31.3	4.2	37.0	63.140	-67.1	17*28*33	21.0						637		
4544	3	109.58	18*44*59	4/21/64	307	32.5	31.3	4.0	37.0	63.134	-63.5	19* 9*33	24.6						637		
4545	2	84.91	20*22*23	4/21/64	307	32.6	31.2	3.9	37.0	63.127	-59.4	20*59* 3	36.7						637		
4555	2	-161.80	12*36*26	4/22/64	308	33.2	30.9	2.1	37.3	63.062	-62.5	12*48*33	12.1						638		
4557	3	148.85	15*51*14	4/22/64	308	33.3	30.8	1.7	37.3	63.049	-61.9	16*10*33	19.3						638		
4559	3	99.51	19* 6* 2	4/22/64	308	33.4	30.7	1.4	37.4	63.036	-53.3	19*31*33	25.5						638		
4569	2	-147.20	11*20* 5	4/23/64	309	34.0	30.3	-0.4	37.5	62.971	-63.8	11*29*33	0.5						639		
4573	3	114.10	17*49*42	4/23/64	309	34.2	30.2	-1.1	37.6	62.944	-45.1	18*12*33	22.9						639		
4574	2	89.43	19*27* 6	4/23/64	309	34.3	30.1	-1.3	37.6	62.938	-62.8	20* 4*33	37.5						639		
4584	2	-157.28	11*41* 8	4/24/64	310	35.0	29.7	-3.1	37.8	62.872	-52.3	11*52* 3	10.9						640		
4586	3	153.36	14*55*57	4/24/64	310	35.2	29.7	-3.4	37.7	62.858	-62.9	15*14*33	18.6						640		
4589	2	79.35	19*48*10	4/24/64	310	35.4	29.5	-4.0	37.8	62.838	-58.5	20*25*33	37.4						640		
4598	2	-142.69	10*24*48	4/25/64	311	36.4	29.4	-5.9	37.8	62.778	-64.6	10*33*33	8.8						641		
4602	3	118.62	16*54*25	4/25/64	311	36.8	29.4	-6.8	37.9	62.751	-68.9	17*17*33	23.1						641		
4603	2	93.95	18*31*49	4/25/64	311	36.9	29.3	-7.0	37.9	62.745	-60.8	19* 6*33	34.7						641		
4613	2	-152.76	10*45*51	4/26/64	312	38.0	29.2	-9.2	37.9	62.677	-52.8	10*55*33	9.7						642		
4618	2	83.87	18*52*52	4/26/64	312	38.2	29.2	-10.3	38.0	62.643	-36.3	19*29*33	36.7						642		
4625	1	-88.82	6*14*42	4/27/64	313	37.8	29.2	-11.3	38.3	62.596	-6.3	6*22*33	7.9						643		
4630	3	147.81	14*21*43	4/27/64	313	37.5	29.1	-11.9	38.5	62.562	-64.8	14*41*33	19.8						643		

READOUT								ORBIT						TIME INTERVAL OF FILE ON FMR TAPE						FMR TAPE REEL NO.
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	REGIN E N D			DROPOUTS, MINUTES W/R/T ANO						FMR TAPE REEL NO.
		EARTH LONGITUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLINA- TION (DEG)	RIGHT ASCEN- SION (DEG)	MINI- MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINUTE W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINUTE W/R/T ANO	FROM-	TO-					
4632	3	98.47	17*36*32	4/27/64	313	37.4	29.1	-12.2	38.6	62.548	-53.9	18* 1*33	25.0					643		
4642	2	-148.27	9*50*34	4/28/64	314	36.8	28.9	-13.5	39.0	62.479	-66.1	9*59*33	9.0					644		
4646	3	113.03	16*20*11	4/28/64	314	36.6	28.8	-14.0	39.1	62.452	-43.8	16*43*33	23.4					644		
4647	2	88.36	17*57*35	4/28/64	314	36.6	28.8	-14.2	39.2	62.445	-61.1	18*33* 3	35.5					644		
4657	2	-158.35	10*11*37	4/29/64	315	36.0	28.6	-15.6	39.6	62.376	-59.6	10*23* 3	11.4					645		
4661	3	102.96	16*41*14	4/29/64	315	35.8	28.4	-16.1	39.7	62.348	-42.5	17* 6* 3	24.8					645		
4671	2	-143.75	8*55*16	4/30/64	316	35.3	28.2	-17.5	40.1	62.278	-66.5	9* 5*33	10.3					646		
4675	3	117.55	15*24*53	4/30/64	316	35.2	28.0	-18.1	40.2	62.250	-49.7	15*47*33	22.7					646		
4676	2	92.88	17* 2*17	4/30/64	316	35.1	28.0	-18.3	40.2	62.243	-61.1	17*38* 3	35.8					646		
4686	2	-153.83	9*16*19	5/ 1/64	317	34.6	27.7	-19.7	40.6	62.172	-58.8	9*26*33	10.2					647		
4690	3	107.47	15*45*56	5/ 1/64	317	34.5	27.6	-20.3	40.8	62.144	-43.4	16*10* 3	24.1					647		
4705	2	97.40	16* 6*59	5/ 2/64	318	33.7	27.0	-22.4	41.3	62.037	-44.8	16*42* 3	35.1					648		
4715	2	-149.31	8*21* 1	5/ 3/64	319	33.0	26.5	-23.7	41.7	61.965	-51.8	8*30*33	9.5					649		
4720	2	87.32	16*28* 2	5/ 3/64	319	32.7	26.3	-24.4	41.9	61.929	-60.5	17* 4*33	36.5					649		
4734	3	101.92	15*11*41	5/ 4/64	320	31.5	25.6	-26.3	42.4	61.828	14.8	15*36*33	24.9					650		
4744	2	-144.82	7*25*44	5/ 5/64	321	28.4	24.5	-26.3	43.4	61.755	-65.1	7*34*33	8.8					651		
4748	3	116.49	13*55*20	5/ 5/64	321	27.5	23.9	-26.1	43.7	61.726	-48.8	14*18*33	23.2					651		
4749	2	91.81	15*32*45	5/ 5/64	321	27.2	23.8	-26.2	43.7	61.718	-5.0	16* 8*33	35.8					651		
4756	1	-80.87	2*54*34	5/ 6/64	322	24.9	23.2	-26.3	44.5	61.667	-84.3	3* 3*33	9.0					652		
4759	2	-154.89	7*46*47	5/ 6/64	322	24.1	22.7	-26.1	44.8	61.645	-61.0	7*57*33	10.8					652		
4761	1	155.76	11* 1*35	5/ 6/64	322	23.7	22.3	-26.0	45.0	61.630	-62.8	11*32*33	31.0					652		
4763	3	106.41	14*16*24	5/ 6/64	322	23.2	22.1	-26.0	45.1	61.615	-43.1	14*40*33	24.2					652		
4773	2	-140.30	6*30*26	5/ 7/64	323	20.0	21.0	-25.9	46.2	61.541	-63.4	6*38*33	8.1					653		
4776	1	145.68	11*22*38	5/ 7/64	323	19.3	20.3	-25.7	46.4	61.518	-60.2	11*55*33	32.9					653		
4777	3	121.00	13* 0* 3	5/ 7/64	323	19.0	20.2	-25.6	46.4	61.511	-53.0	13*22*33	22.5					653		
4788	2	-150.38	6*51*29	5/ 8/64	324	15.4	18.9	-25.3	47.6	61.429	-55.5	7* 0*33	9.1					654		

READOUT								ORBIT						TIME INTERVAL OF FILE ON FMR TAPE						FMR TAPE REEL NO.
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN -NA	VECTOR ASCEN -SION (DEG)	ATTITUDE MINI -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)	SPIN RATE (DEG /SEC)	REGIN	F N D			DROPOUTS, MINUTES W/R/T ANO		FMR TAPE REEL NO.			
		EARTH LONGI TUDUE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY						MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO	FROM- TO-						
4790	1	160.27	10* 6*17	5/ 8/64	324	14.9	18.5	-25.1	47.8	61.414	-64.0	10*37* 3	30.8					654		
4792	3	110.93	13*21* 6	5/ 8/64	324	14.4	18.2	-25.0	47.9	61.399	-43.5	13*44*33	23.5					654		
4793	2	86.25	14*58*30	5/ 8/64	324	14.0	18.2	-25.0	48.0	61.391	-58.5	15*34* 3	35.6					654		
4800	1	-86.44	2*20*19	5/ 9/64	325	11.6	17.6	-24.9	48.9	61.338	-84.4	2*30*33	10.2					655		
4805	3	150.19	10*27*21	5/ 9/64	325	10.3	16.6	-24.5	49.2	61.300	-64.1	10*46*33	19.2					655		
4821	3	115.44	12*25*48	5/10/64	326	5.4	14.7	-23.8	50.8	61.178	-47.9	12*49*57	24.2					656		
4832	2	-155.94	6*17*14	5/11/64	327	1.9	13.7	-23.4	52.0	61.094	-57.0	6*28* 3	10.8					657		
4834	1	154.71	9*32* 3	5/11/64	327	1.4	13.4	-23.3	52.0	61.079	-61.6	10* 3*33	31.5					657		
4837	2	80.69	14*24*15	5/11/64	327	0.2	13.2	-23.1	52.3	61.063	-55.7	15* 3* 3	38.8					657		
4861	2	-151.40	5*21*56	5/13/64	329	-18.3	11.4	-15.2	57.4	60.903	-53.2	5*31*33	9.6					658		
4863	1	159.25	8*36*44	5/13/64	329	-19.5	10.9	-14.5	57.6	60.890	-64.4	9* 7*33	30.8					658		
4864	1	134.58	10*14* 9	5/13/64	329	-20.2	10.8	-14.1	57.7	60.884	-55.1	10*48* 3	33.0					658		
4865	2	109.90	11*51*33	5/13/64	329	-20.6	10.7	-13.7	57.9	60.877	-52.2	12*24*33	33.0					658		
4866	2	85.23	13*28*57	5/13/64	329	-20.6	10.7	-13.6	58.0	60.871	-53.1	14* 8*33	39.6					658		
4873	1	-87.46	0*50*46	5/14/64	330	-20.9	10.6	-14.6	58.4	60.827	-85.0	0*59* 3	8.3					659		
4875	2	-136.80	4* 5*35	5/14/64	330	-20.9	10.5	-14.8	58.5	60.815	-66.3	4*12*33	7.0					659		
4876	2	-161.47	5*42*59	5/14/64	330	-20.9	10.5	-15.0	58.5	60.808	-78.8	5*56* 3	13.1					659		
4878	1	149.18	8*57*47	5/14/64	330	-21.0	10.4	-15.2	58.6	60.796	-61.0	9*29*33	31.8					659		
4880	2	99.83	12*12*36	5/14/64	330	-21.0	10.4	-15.5	58.7	60.784	-42.6	12*50* 3	37.5					659		
4888	1	-97.53	1*11*49	5/15/64	331	-21.2	10.3	-16.6	59.1	60.735	-8.4	1*22*22	10.6					660		
4890	2	-146.87	4*26*38	5/15/64	331	-21.2	10.2	-17.0	59.2	60.723	-72.4	4*37* 3	10.4					660		
4894	3	114.43	10*56*15	5/15/64	331	-21.1	10.1	-17.7	59.3	60.700	-43.4	11*19*33	23.3					660		
4895	2	89.76	12*33*39	5/15/64	331	-21.0	10.1	-17.8	59.3	60.694	-62.0	13*12* 3	38.4					660		
4902	1	-82.93	23*55*28	5/15/64	331	-20.8	9.9	-19.0	59.6	60.653	-85.9	0* 3*33	8.1					661		
4903	1	-107.60	1*32*53	5/16/64	332	-20.8	9.8	-19.2	59.6	60.647	-77.9	1*43*33	10.7					661		
4904	2	-132.28	3*10*17	5/16/64	332	-20.8	9.8	-19.3	59.7	60.641	-75.3	3*17*33	7.3					661		

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE					FMR TAPE REEL NO.
ORBIT NO.	COA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NOOE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	E N D		DROPOUTS, MINUTES W/R/T ANO					
		EARTH LONGI -TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NADIR (DEG)	TOT (MIN. AFTER AND)		MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO	FROM-	TO-				
4905	2	-156.95	4*47*41	5/16/64	332	-20.7	9.8	-19.5	59.7	60.635	-78.2	4*58*33	10.9				661		
4907	1	153.70	8* 2*29	5/16/64	332	-20.7	9.7	-19.8	59.8	60.624	-63.7	8*33*33	31.1				661		
4908	1	129.03	9*39*54	5/16/64	332	-20.6	9.7	-20.0	59.9	60.618	-54.9	10*15* 3	35.2				661		
4909	3	104.36	11*17*18	5/16/64	332	-20.6	9.6	-20.1	59.9	60.612	-51.8	11*41*33	24.3				661		
4910	2	79.69	12*54*42	5/16/64	332	-20.6	9.6	-20.3	59.9	60.607	-61.8	13*34* 3	39.4				661		
4917	1	-93.01	0*16*31	5/17/64	333	-20.3	9.3	-21.4	60.2	60.567	-83.7	0*25*33	9.0				662		
4918	1	-117.67	1*53*56	5/17/64	333	-20.3	9.3	-21.6	60.3	60.561	-76.7	2* 6*33	12.6				662		
4919	2	-142.35	3*31*20	5/17/64	333	-20.3	9.3	-21.7	60.3	60.555	-73.6	3*42* 3	10.7				662		
4922	1	143.63	8*23*32	5/17/64	333	-20.2	9.2	-22.2	60.4	60.538	-54.8	8*56* 3	32.5				662		
4923	3	118.96	10* 0*57	5/17/64	333	-20.6	9.2	-22.4	60.4	60.533	-54.1	10*23*33	22.6				662		
4924	2	94.28	11*38*23	5/17/64	333	-21.2	9.3	-22.3	60.4	60.527	-63.5	12*15* 3	36.7				662		
4932	1	-103.08	0*37*34	5/18/64	334	-26.2	10.6	-20.2	62.2	60.482	-75.9	0*49* 3	11.5				663		
4933	1	-127.75	2*14*59	5/18/64	334	-26.6	10.5	-20.0	62.4	60.477	-74.4	2*31*23	16.4				663		
4934	2	-152.42	3*52*23	5/18/64	334	-27.1	10.3	-19.7	62.5	60.471	-33.0	4* 4*37	12.2				663		
4937	1	133.55	8*44*35	5/18/64	334	-28.5	9.7	-18.7	62.7	60.455	-55.4	9*21* 3	36.5				663		
4938	3	108.88	10*22* 0	5/18/64	334	-29.2	9.8	-18.3	62.8	60.449	-49.8	10*45*33	23.6				663		
4939	2	84.21	11*59*24	5/18/64	334	-29.9	10.0	-17.9	63.0	60.444	-62.1	12*37* 3	37.7				663		
4946	1	-88.48	23*21*13	5/18/64	334	-34.0	12.8	-16.4	64.6	60.405	-86.7	23*30* 3	8.8				664		
4947	1	-113.20	0*58*37	5/19/64	335	-34.4	12.9	-16.2	64.8	60.400	-77.7	1*11* 3	12.4				664		
4948	2	-137.87	2*36* 2	5/19/64	335	-34.8	13.0	-16.1	65.0	60.394	-73.9	2*44* 3	8.0				664		
4949	2	-162.54	4*13*26	5/19/64	335	-35.1	12.9	-15.9	65.1	60.389	-77.6	4*26*33	13.1				664		
4951	1	148.10	7*28*14	5/19/64	335	-36.0	12.8	-15.4	65.3	60.378	-61.1	8* 0* 3	31.8				664		
4952	1	123.43	9* 5*38	5/19/64	335	-36.6	12.9	-15.0	65.4	60.372	-55.5	9*44*33	38.9				664		
4961	1	-98.60	23*42*16	5/19/64	335	-41.2	17.4	-13.0	67.2	60.323	-86.0	23*53* 3	10.8				665		
4962	1	-123.27	1*19*40	5/20/64	336	-41.4	17.5	-12.9	67.4	60.317	-74.9	1*34*33	14.9				665		
4963	2	-147.94	2*57* 5	5/20/64	336	-41.7	17.5	-12.8	67.5	60.312	-71.5	3* 8* 3	11.0				665		

		READOUT				ORBIT					TIME INTERVAL OF FILE ON FMR TAPE				FMR TAPE REEL NO.	
ORBIT NO.	CDA STA	SATELLITE EQUATOR ASCENDING CROSSING AT ORBITAL NODE (ANO)				SPIN VECTOR ATTITUDE					BEGIN MINU-TES W/R/T AND	E N D HOURS MINUTES SECONDS (GMT)	DROPOUTS, MINUTES W/R/T -			
		EARTH LONGITUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLINATION (DEG)	RIGHT ASCEN-SION (DEG)	MINIMUM NADIR (DEG)	TOT (MIN. AFTER AND)	SPIN RATE (DEG /SEC)						
4965	1	162.70	6*11*53	5/20/64	336	-42.3	17.2	-12.4	67.6	60.301	-62.0	6*42*33	30.7		665	
4966	1	138.03	7*49*17	5/20/64	336	-42.8	17.2	-12.1	67.7	60.295	-54.9	8*22*33	33.3		665	
4968	2	88.69	11* 4* 6	5/20/64	336	-44.1	18.0	-11.3	67.9	60.284	-62.2	11*40* 3	36.0		665	
4975	1	-84.00	22*25*55	5/20/64	336	-46.6	24.5	-10.2	69.7	60.245	-87.9	22*34*33	8.6		666	
4976	1	-108.68	0* 3*19	5/21/64	337	-46.8	25.0	-10.2	69.9	60.240	3.8	0*15* 3	11.7		666	
4977	2	-133.35	1*40*43	5/21/64	337	-46.9	25.3	-10.2	70.1	60.234	-74.4	1*48* 3	7.3		666	
4978	2	-158.02	3*18* 7	5/21/64	337	-47.0	25.5	-10.2	70.2	60.229	-78.5	3*29*33	11.4		666	
4980	1	152.63	6*32*56	5/21/64	337	-47.5	25.8	-10.0	70.4	60.218	-62.5	7* 4*33	31.6		666	
4981	1	127.95	8*10*20	5/21/64	337	-47.9	26.2	-9.8	70.5	60.212	-53.7	8*45*33	35.2		666	
4983	2	78.61	11*25* 8	5/21/64	337	-48.8	28.1	-9.1	70.7	60.201	-58.7	12* 4* 3	38.9		666	
4990	1	-94.08	22*46*58	5/21/64	337	-49.2	36.4	-8.9	72.6	60.162	-85.4	22*57*33	10.6		667	
4991	1	-118.75	0*24*22	5/22/64	338	-49.0	37.0	-9.0	72.8	60.156	-75.8	0*37*57	13.6		667	
4994	1	167.22	5*16*35	5/22/64	338	-48.9	37.9	-9.3	73.2	60.140	-63.1	5*47*33	31.0		667	
4995	1	142.55	6*53*59	5/22/64	338	-49.0	38.3	-9.3	73.3	60.134	7.1	7*26*33	32.6		667	
4997	2	93.21	10* 8*47	5/22/64	338	-49.4	40.0	-8.9	73.6	60.123	-60.1	10*45* 3	36.3		667	
5005	1	-104.16	23* 8* 1	5/22/64	338	-47.2	48.2	-9.6	75.6	60.078	-75.0	23*19* 3	11.0		668	
5007	2	-153.50	2*22*49	5/23/64	339	-46.4	48.8	-10.2	75.9	60.067	-62.0	2*32*33	9.7		668	
5009	1	157.15	5*37*38	5/23/64	339	-45.7	49.3	-10.7	76.1	60.056	-61.7	6* 8*33	30.9		668	
5012	2	83.13	10*29*50	5/23/64	339	-44.8	51.2	-11.2	76.6	60.039	-31.1	11* 6*33	36.7		668	
5019	1	-89.56	21*51*39	5/23/64	339	-41.2	55.4	-12.9	78.1	59.999	-87.3	21*59*33	7.9		669	
5024	1	147.07	5*58*40	5/24/64	340	-39.0	55.6	-14.6	78.7	59.970	-64.3	6*30*33	31.9		669	
5026	2	97.73	9*13*29	5/24/64	340	-38.2	56.2	-15.1	78.9	59.959	-40.7	9*47*33	34.1		669	
5034	1	-99.63	22*12*42	5/24/64	340	-33.2	58.8	-17.5	80.6	59.912	-77.7	22*23* 3	10.4		670	
5036	2	-148.98	1*27*31	5/25/64	341	-32.2	58.5	-18.3	80.8	59.900	-63.2	1*37*33	10.0		670	
5038	1	161.67	4*42*19	5/25/64	341	-31.4	58.2	-19.1	81.0	59.889	-61.8	5*13* 3	30.7		670	
5041	2	87.65	9*34*32	5/25/64	341	-30.2	58.9	-19.7	81.4	59.871	-30.4	10*10*33	36.0		670	

ORBIT NO.	CDA STA	READOUT					ORBIT					TIME INTERVAL OF FILE ON FMR TAPE					FMR TAPE REEL NO.
		SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	E N D	DROPOUTS, MINUTES W/R/T AND				
		EARTH LONGI-TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI-NA-TION (DEG)	RIGHT ASCEN-SION (DEG)	MINI-MUM NADIR (DEG)	TOT (MIN. AFTER AND)		MINU-TES W/R/T AND	HOURS MINUTES SECONDS (GMT)	MINU-TES W/R/T AND	FROM-	TO-		
5063	1	-95.14	21*17*24	5/26/64	342	-17.6	62.6	-24.5	85.6	59.738	-86.1	21*28* 3	10.7			671	
5065	2	-144.48	0*32*12	5/27/64	343	-16.4	62.2	-25.4	85.9	59.726	-63.8	0*43* 3	10.9			671	
5067	1	166.16	3*47* 1	5/27/64	343	-15.5	61.7	-26.2	86.1	59.713	-63.0	4*18*33	31.5			671	
5070	2	92.15	8*39*13	5/27/64	343	-14.2	61.6	-26.8	86.5	59.695	-31.8	9*14*33	35.3			671	
5077	1	-80.54	20* 1* 3	5/27/64	343	-9.4	62.2	-28.4	87.9	59.650	-88.8	20*10*33	9.5			672	
5078	1	-105.21	21*38*27	5/27/64	343	-8.7	62.0	-28.9	88.1	59.644	-38.9	21*50* 3	11.6			672	
5080	2	-154.56	0*53*15	5/28/64	344	-8.4	61.8	-29.4	88.4	59.631	-61.6	1* 3*33	10.3			672	
5085	2	82.07	9* 0*16	5/28/64	344	-8.3	61.5	-28.7	88.6	59.599	26.0	9*37* 3	36.8			672	
5092	1	-90.62	20*22* 5	5/28/64	344	-8.0	61.2	-27.9	89.0	59.553	-55.5	20*31* 3	9.0			673	
5094	2	-139.96	23*36*54	5/28/64	344	-8.0	61.1	-27.6	89.1	59.539	-60.4	23*48* 3	11.2			673	
5097	1	146.01	4*29* 6	5/29/64	345	-7.9	60.8	-27.3	89.2	59.519	-51.7	5* 3*33	34.5			673	
5099	2	96.67	7*43*55	5/29/64	345	-7.9	60.7	-27.0	89.3	59.506	-39.5	8*18*33	34.6			673	
5107	1	-100.70	20*43* 8	5/29/64	345	-7.5	60.4	-26.0	89.8	59.451	-66.0	20*53* 3	9.9			674	
5109	2	-150.04	23*57*57	5/29/64	345	-7.4	60.2	-25.8	89.8	59.437	-63.9	0* 8* 3	10.1			674	
5111	3	160.61	3*12*45	5/30/64	346	-7.4	60.1	-25.5	89.9	59.423	-12.5	3*31*33	18.8			674	
5114	2	86.59	8* 4*58	5/30/64	346	-7.3	59.9	-25.2	90.0	59.402	-53.8	8*40*33	35.6			674	
5121	1	-86.10	19*26*47	5/30/64	346	-7.0	59.6	-24.2	90.4	59.352	-87.3	19*37*33	10.8			675	
5123	2	-135.45	22*41*35	5/30/64	346	-6.9	59.5	-24.0	90.5	59.337	-62.5	22*52*33	11.0			675	
5126	1	150.53	3*33*48	5/31/64	347	-6.8	59.3	-23.6	90.6	59.315	-50.6	4* 6*33	32.8			675	
5128	2	101.18	6*48*36	5/31/64	347	-6.8	59.2	-23.4	90.7	59.301	-41.5	7*22*33	34.0			675	
5136	1	-96.18	19*47*50	5/31/64	347	-6.4	58.9	-22.3	91.1	59.241	-78.7	19*57*33	9.7			676	
5138	2	-145.52	23* 2*38	5/31/64	347	-6.3	58.7	-22.0	91.2	59.243	2.5	23*12* 3	9.4			676	
5141	1	140.45	3*54*51	6/ 1/64	348	-5.5	59.4	-21.4	91.6	59.223	-52.6	4*30* 3	35.2			676	
5143	2	91.11	7* 9*39	6/ 1/64	348	-5.4	59.3	-21.1	91.7	59.209	-66.2	7*44*33	34.9			676	
5150	1	-81.58	18*31*28	6/ 1/64	348	-4.9	59.1	-20.1	92.1	59.162	-87.7	18*40*33	9.1			677	
5151	1	-106.25	20* 8*52	6/ 1/64	348	-4.9	59.1	-19.9	92.1	59.156	-67.2	20*20*33	11.7			677	

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE						FMR TAPE REEL NO.
ORBIT NO.	COA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN		F N D		DROPOUTS, MINUTES W/R/T ANO		FROM- TO-	FMR TAPE REEL NO.		
		EARTH LONGI- TITUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI- -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI- -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU- -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU- -TES W/R/T ANO	FROM- TO-						
5152	2	-130.93	21*46*17	6/ 1/64	348	-4.8	59.0	-19.8	92.2	59.149	-6.3	21*55* 3	8.8	.	.	.	677			
5158	2	81.03	7*30*42	6/ 2/64	349	-4.6	58.7	-19.0	92.5	59.109	-64.1	8* 7*33	36.9	.	.	.	677			
5165	1	-91.66	18*52*31	6/ 2/64	349	-4.1	58.6	-18.0	92.9	59.062	-86.2	19* 2* 3	9.5	.	.	.	678			
5167	2	-141.00	22* 7*19	6/ 2/64	349	-3.9	58.4	-17.7	93.0	59.049	-61.7	22*17* 3	9.7	.	.	.	678			
5170	3	144.97	2*59*32	6/ 3/64	350	-3.8	58.3	-17.3	93.1	59.029	-50.6	3*19* 3	19.5	.	.	.	678			
5172	2	95.63	6*14*20	6/ 3/64	350	-3.7	58.2	-17.0	93.2	59.016	-53.0	6*48*33	34.2	.	.	.	678			
5180	1	-101.74	19*13*34	6/ 3/64	350	-3.1	58.0	-15.8	93.6	58.963	-79.9	19*23* 3	9.5	.	.	.	679			
5182	2	-151.08	22*28*22	6/ 3/64	350	-2.8	57.8	-15.6	93.7	58.950	-65.3	22*39* 3	10.7	.	.	.	679			
5185	3	134.90	3*20*35	6/ 4/64	351	-2.5	57.6	-15.4	93.8	58.930	-72.7	3*42* 3	21.5	.	.	.	679			
5187	2	85.55	6*35*23	6/ 4/64	351	-2.2	57.5	-15.2	94.0	58.917	-52.3	7*11* 3	35.7	.	.	.	679			
5194	1	-87.14	17*57*12	6/ 4/64	351	-1.0	57.3	-14.5	94.5	58.871	-36.7	18* 5*33	8.4	.	.	.	680			
5196	2	-136.48	21*12* 1	6/ 4/64	351	-0.7	57.2	-14.4	94.7	58.858	-58.8	21*20* 3	8.0	.	.	.	680			
5199	3	149.49	2* 4*13	6/ 5/64	352	-0.3	56.9	-14.2	94.8	58.838	-70.7	2*25* 3	20.8	.	.	.	680			
5201	3	100.15	5*19* 2	6/ 5/64	352	-0.1	56.8	-14.0	95.0	58.825	-53.4	5*44*33	25.5	.	.	.	680			
5209	1	-97.21	18*18*15	6/ 5/64	352	1.4	56.6	-13.2	95.5	58.773	-87.6	18*29* 3	10.8	.	.	.	681			
5211	2	-146.56	21*33* 4	6/ 5/64	352	1.7	56.4	-13.1	95.6	58.760	-63.7	21*43*33	10.5	.	.	.	681			
5213	1	164.09	0*47*52	6/ 6/64	353	1.9	56.3	-13.0	95.8	58.747	-63.0	1*19*33	31.7	.	.	.	681			
5216	2	90.07	5*40* 4	6/ 6/64	353	2.3	56.1	-12.7	95.9	58.727	-68.5	6*15*33	35.5	.	.	.	681			
5224	1	-107.29	18*39*18	6/ 6/64	353	3.8	55.9	-11.9	96.6	58.675	-81.1	18*51*33	12.3	.	.	.	682			
5226	2	-156.64	21*54* 6	6/ 6/64	353	4.1	55.7	-11.8	96.7	58.663	-62.2	22* 6* 3	12.0	.	.	.	682			
5229	3	129.34	2*46*19	6/ 7/64	354	4.5	55.5	-11.5	96.9	58.643	-71.1	3* 7*33	21.2	.	.	.	682			
5231	2	79.99	6* 1* 7	6/ 7/64	354	4.8	55.4	-11.4	97.0	58.630	-52.3	6*38*33	37.4	.	.	.	682			
5238	1	-92.70	17*22*57	6/ 7/64	354	6.2	55.2	-10.9	0.	58.585	-87.6	17*32* 3	9.1	.	.	.	683			
5240	2	-142.04	20*37*45	6/ 7/64	354	6.5	55.1	-10.7	0.2	58.572	-64.5	20*47*33	9.8	.	.	.	683			
5243	3	143.93	1*29*57	6/ 8/64	355	6.9	54.8	-10.5	0.4	58.553	-59.5	1*49*33	19.6	.	.	.	683			
5245	2	94.59	4*44*46	6/ 8/64	355	7.2	54.7	-10.3	0.5	58.540	-52.4	5*19*33	34.8	.	.	.	683			

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE					FMR TAPE REEL NO.
ORBIT NO.	LDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	E N D	DROPOUTS, MINUTES W/R/T ANO		FROM-	TO-			
		EARTH LONGI -TUD (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO						
5253	1	-102.78	17*43*59	6/ 8/64	355	8.7	54.6	-9.5	1.1	58.489	-79.0	17*55*33	11.6					684	
5255	2	-152.12	20*58*48	6/ 8/64	355	9.0	54.4	-9.4	1.3	58.477	-62.9	21* 9* 3	10.3					684	
5258	3	133.85	1*51* 0	6/ 9/64	356	9.4	54.2	-9.2	1.5	58.458	-71.6	2*11*33	20.6					684	
5260	2	84.51	5* 5*49	6/ 9/64	356	9.8	54.1	-9.0	1.6	58.445	-53.2	5*41*33	35.7					684	
5267	1	-88.19	16*27*38	6/ 9/64	356	11.2	54.0	-8.3	2.2	58.401	-88.8	16*37* 3	9.4					685	
5269	2	-137.53	19*42*26	6/ 9/64	356	11.5	53.8	-8.1	2.3	58.388	-78.7	19*51* 3	8.6					685	
5272	1	148.44	0*34*39	6/10/64	357	11.9	53.6	-7.9	2.4	58.360	-64.7	1* 7*33	32.9					685	
5274	3	99.10	3*49*27	6/10/64	357	12.3	53.5	-7.8	2.5	58.356	-42.0	4*15*33	26.1					685	
5282	1	-98.26	16*48*41	6/10/64	357	13.9	53.4	-7.0	3.2	58.306	-87.6	16*59*33	10.9					686	
5284	2	-147.60	20* 3*29	6/10/64	357	14.2	53.2	-6.8	3.3	58.293	-59.8	20*13* 3	9.6					686	
5287	3	138.37	0*55*42	6/11/64	358	14.6	53.0	-6.6	3.5	58.275	-59.3	1*16*33	20.9					686	
5289	2	89.03	4*10*30	6/11/64	358	15.0	52.9	-6.5	3.6	58.262	-52.3	4*45*33	35.1					686	
5296	1	-83.66	15*32*19	6/11/64	358	16.4	52.9	-5.8	4.2	58.218	-84.1	15*40*33	8.2					687	
5298	2	-133.01	18*47* 8	6/11/64	358	16.8	52.7	-5.6	4.4	58.206	-64.5	18*55* 3	7.9					687	
5302	3	128.30	1*16*44	6/12/64	359	17.4	52.4	-5.4	4.6	58.181	-56.0	1*39* 3	22.3					687	
5304	2	78.95	4*31*33	6/12/64	359	17.8	52.4	-5.2	4.7	58.168	-51.2	5* 9* 3	37.5					687	
5311	1	-93.74	15*53*22	6/12/64	359	19.2	52.4	-4.5	5.3	58.125	-87.2	16* 3* 3	9.7					688	
5316	3	142.89	0* 0*23	6/13/64	360	20.0	52.1	-4.2	5.6	58.094	-69.4	0*21* 3	20.7					688	
5326	1	-103.81	16*14*25	6/13/64	360	21.8	52.0	-3.2	6.4	58.032	-83.2	16*25* 3	10.6					689	
5328	2	-153.16	19*29*13	6/13/64	360	22.1	51.9	-3.0	6.5	58.020	-63.2	19*40* 3	10.8					689	
5340	1	-89.22	14*58* 3	6/14/64	361	22.0	51.7	-1.0	6.9	57.946	-95.1	15* 7* 3	9.0					690	
5343	2	-163.23	19*50*16	6/14/64	361	21.8	51.8	-0.3	7.0	57.928	-55.9	20* 3* 3	12.8					690	
5345	3	147.42	23* 5* 4	6/14/64	361	21.6	51.8	0.3	7.0	57.915	-59.1	23*26*33	21.5					690	
5346	3	122.75	0*42*28	6/15/64	362	21.5	51.9	0.6	7.0	57.909	-64.5	1* 5*33	23.1					690	
5357	2	-148.63	18*33*54	6/15/64	362	20.6	51.9	3.3	7.3	57.842	-68.8	18*44*33	10.7					691	
5360	3	137.34	23*26* 7	6/15/64	362	20.3	52.0	4.1	7.4	57.824	-69.5	23*47*33	21.4					691	

READOUT										ORBIT					FMR TAPE REEL NO.	
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	B E G I N		E N D		DROPOUTS, MINUTES W/R/T ANO	
		EARTH LONG1 -TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO	FROM-	TO-	
5361	3	112.66	1* 3*31	6/16/64	363	20.3	52.1	4.4	7.4	57.818	-62.6	1*26*33	23.0			691
5372	2	-158.72	18*54*57	6/16/64	363	19.4	52.2	7.1	7.6	57.751	-83.3	18* 6*33	11.6			692
5374	1	151.93	22* 9*45	6/16/64	363	19.3	52.3	7.6	7.6	57.739	-61.0	22*41*33	31.8			692
5375	3	127.25	23*47* 9	6/16/64	363	19.2	52.3	7.9	7.7	57.733	-52.6	0*10* 3	22.9			692
5377	2	77.91	3* 1*58	6/17/64	364	19.0	52.3	8.4	7.7	57.726	-59.0	3*40*33	38.6			692
5386	2	-144.12	17*38*35	6/17/64	364	18.4	52.4	10.5	8.0	57.670	-77.9	17*48* 3	9.5			693
5391	2	92.51	1*45*36	6/18/64	365	18.0	52.6	11.8	8.2	57.639	-60.7	2*20*33	35.0			693
5401	2	-154.20	17*59*38	6/18/64	365	17.4	52.6	14.1	8.5	57.577	-84.0	18* 9*33	9.9			694
5403	3	156.45	21*14*26	6/18/64	365	17.3	52.7	14.6	8.6	57.565	-64.1	21*33* 3	18.6			694
5404	3	131.78	22*51*50	6/18/64	365	17.3	52.7	14.8	8.6	57.558	-66.0	23*12*33	20.7			694
5405	3	107.11	0*29*15	6/19/64	366	17.2	52.8	15.1	8.6	57.552	-63.7	0*53*33	24.3			694
5406	2	82.43	2* 6*39	6/19/64	366	17.1	52.8	15.3	8.6	57.546	-60.6	2*43*33	36.9			694
5429	2	-125.00	15*26*55	6/20/64	367	16.1	53.1	20.4	9.6	57.402	-81.1	15*33*33	6.6			695
5430	2	-149.67	17* 4*19	6/20/64	367	16.1	53.1	20.6	9.7	57.396	-79.1	17*14*33	10.2			695
5442	1	-85.73	12*33* 9	6/21/64	368	17.1	53.5	22.3	10.5	57.321	-94.6	12*42*33	9.4			696
5443	1	-110.41	14*10*33	6/21/64	368	17.3	53.5	22.4	10.5	57.315	-77.6	14*22* 3	11.5			696
5447	3	150.90	20*40*10	6/21/64	368	17.7	53.5	22.7	10.8	57.290	-65.1	21* 0* 3	19.9			696
5479	2	81.39	0*37* 3	6/24/64	371	24.5	54.6	23.2	13.9	57.096	-48.6	1*14* 3	37.0			697
5493	2	95.99	23*20*42	6/24/64	371	32.3	58.7	20.0	16.8	57.014	-55.4	23*55*33	34.9			698
5502	2	-126.05	13*57*19	6/25/64	372	36.2	64.4	18.9	19.1	56.962	-67.4	14* 4*33	7.2			699
5508	2	85.91	23*41*44	6/25/64	372	38.4	66.8	17.9	19.9	56.928	-53.8	0*17* 0	35.3			699
5517	2	-136.12	14*18*22	6/26/64	373	40.1	74.0	17.6	22.2	56.879	-65.3	14*27* 3	8.7			700
5520	3	149.86	19*10*34	6/26/64	373	40.5	75.0	17.5	22.6	56.862	-63.4	19*30*33	20.0			700
5521	3	125.18	20*47*59	6/26/64	373	40.8	75.6	17.4	22.8	56.857	-64.1	21*10*33	22.6			700
5532	2	-146.19	14*39*24	6/27/64	374	40.7	77.5	17.5	23.9	56.799	-32.7	14*48*33	9.2			701
5536	3	115.11	21* 9* 1	6/27/64	374	40.7	77.8	17.5	24.2	56.779	-62.7	21*32* 3	23.0			701

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE						FMR TAPE REEL NO.
ORBIT NO.	COA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)					SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	E	N	D	DROPOUTS, MINUTES W/R/T ANO		FMR TAPE REEL NO.		
		EARTH LONGITUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLT -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NADIR (DEG)	TOT (MIN. AFTER ANO1)	MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO	FROM-	TO-	FROM-	TO-				
5537	2	90.44	22*46*25	6/27/64	374	40.7	77.9	17.5	24.3	56.773	-59.9	23*24*33	38.1					701		
5544	1	-82.25	10* 8*14	6/28/64	375	40.6	78.5	17.6	24.7	56.736	-10.9	10*16*33	8.3					702		
5547	2	-156.27	15* 0*27	6/28/64	375	40.5	78.7	17.6	24.9	56.720	-54.4	15*11*33	11.1					702		
5549	1	154.38	18*15*15	6/28/64	375	40.5	78.9	17.7	25.1	56.709	-62.0	18*49*33	34.3					702		
5559	1	-92.32	10*29*17	6/29/64	376	40.3	79.7	17.6	25.8	56.656	-55.7	10*38*57	9.7					703		
5561	2	-141.67	13*44* 5	6/29/64	376	40.2	79.9	17.6	26.0	56.646	-17.2	13*52*33	8.5					703		
5574	1	-102.42	10*50*19	6/30/64	377	39.8	80.8	17.5	27.0	56.577	-79.8	10*59*33	9.2					704		
5576	2	-151.76	14* 5* 8	6/30/64	377	39.8	81.0	17.5	27.1	56.566	-64.6	14*14*33	9.4					704		
5579	3	134.21	18*57*20	6/30/64	377	39.7	81.2	17.4	27.3	56.551	-53.6	19*18* 3	20.7					704		
5591	2	-161.83	14*26*10	7/ 1/64	378	39.3	82.0	17.1	28.1	56.487	-52.9	14*39* 3	12.9					705		
5593	3	148.81	17*40*59	7/ 1/64	378	39.2	82.1	17.0	28.3	56.477	-61.2	18* 1* 3	20.1					705		
5594	3	124.14	19*18*23	7/ 1/64	378	39.2	82.2	17.0	28.3	56.472	-63.9	19*40* 3	21.7					705		
5605	2	-147.24	13* 9*49	7/ 2/64	379	38.7	82.9	16.6	29.1	56.414	-67.2	13*18*33	8.7					706		
5609	3	114.07	19*39*26	7/ 2/64	379	38.6	83.1	16.4	29.4	56.393	-42.5	20* 2*33	23.1					706		
5620	2	-157.31	13*30*51	7/ 3/64	380	38.1	83.8	15.8	30.1	56.334	-69.5	13*42* 3	11.2					707		
5623	3	128.67	18*23* 4	7/ 3/64	380	38.0	83.9	15.7	30.3	56.319	-51.9	18*45*33	22.5					707		
5634	2	-142.71	12*14*30	7/ 4/64	381	37.4	84.5	15.0	31.1	56.269	-69.5	12*22*33	8.1					708		
5638	3	118.59	18*44* 6	7/ 4/64	381	37.3	84.6	14.7	31.3	56.255	-43.6	19* 8* 3	24.0					708		
5649	2	-152.79	12*35*32	7/ 5/64	382	36.8	85.1	13.9	32.1	56.200	-69.0	12*45*33	10.0					709		
5652	3	133.19	17*27*45	7/ 5/64	382	36.8	85.1	13.5	32.1	56.184	-53.2	17*50* 3	22.3					709		
5654	2	83.84	20*42*33	7/ 5/64	382	36.9	85.0	13.3	32.2	56.173	-50.8	21*20* 3	37.5					709		
5664	2	-162.86	12*56*35	7/ 6/64	383	37.4	84.7	11.9	32.6	56.119	-53.5	13* 9*33	13.0					710		
5667	3	123.11	17*48*47	7/ 6/64	383	37.5	84.7	11.5	32.7	56.102	-49.5	18*12* 3	23.3					710		
5668	2	98.44	19*26*11	7/ 6/64	383	37.6	84.7	11.4	32.8	56.097	-61.4	20* 1* 3	34.9					710		
5678	2	-148.27	11*40*13	7/ 7/64	384	38.1	84.3	10.0	33.1	56.042	-55.8	11*49* 3	8.8					711		
5681	3	137.71	16*32*25	7/ 7/64	384	38.2	84.3	9.5	33.2	56.025	-53.5	16*52*33	20.1					711		

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE						FMR TAPE REEL NO.
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN	VECTOR ATTITUDE			BEGIN	E N D			DROPOUTS, MINUTES W/R/T ANO						FMR TAPE REEL NO.
		EARTH LONGI-TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY		DECLI-NA-TION (DEG)	RIGHT ASCEN-SION (DEG)	MINI-MUM NADIR (DEG)		SPIN RATE (DEG /SEC)	MINU-TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU-TES W/R/T ANO	FROM-	TO-				
5683	2	88.36	19*47*14	7/ 7/64	384	38.3	84.2	9.2	33.3	56.013	-53.8	20*22*33	35.3					711		
5693	2	-158.34	12* 1*15	7/ 8/64	385	38.8	83.9	7.8	33.5	55.957	-69.2	12*12*33	11.3					712		
5698	2	78.29	20* 8*16	7/ 8/64	385	38.4	84.1	7.3	33.8	55.928	-50.0	20*48* 3	39.8					712		
5706	1	-119.07	9* 7*29	7/ 9/64	386	37.7	84.5	6.7	34.3	55.882	-72.5	9*20*33	13.1					713		
5709	3	166.90	13*59*42	7/ 9/64	386	37.5	84.5	6.4	34.5	55.864	-48.2	14*17*33	17.9					713		
5711	3	117.56	17*14*30	7/ 9/64	386	37.4	84.6	6.2	34.6	55.853	-56.0	17*37*27	23.0					713		
5712	2	92.89	18*51*54	7/ 9/64	386	37.3	84.7	6.1	34.7	55.847	-62.5	19*29* 3	37.2					713		
5722	2	-153.82	11* 5*56	7/10/64	387	36.4	85.0	5.2	35.4	55.788	-58.8	11*16* 3	10.1					714		
5724	3	156.83	14*20*45	7/10/64	387	36.2	85.0	5.0	35.4	55.776	-63.1	14*39*33	18.8					714		
5726	3	107.49	17*35*33	7/10/64	387	36.1	85.1	4.8	35.5	55.765	-55.9	18* 0*33	25.0					714		
5727	2	82.82	19*12*57	7/10/64	387	36.0	85.1	4.7	35.6	55.759	-60.0	19*49*33	36.6					714		
5738	3	171.43	13* 4*23	7/11/64	388	35.0	85.3	3.6	36.3	55.693	-40.9	13*22*33	18.2					715		
5740	3	122.09	16*19*11	7/11/64	388	34.9	85.3	3.4	36.4	55.681	-54.9	16*41*33	22.4					715		
5749	1	-99.95	6*55*49	7/12/64	389	34.0	85.6	2.4	36.9	55.628	-34.6	7* 4*33	8.7					716		
5753	3	161.36	13*25*25	7/12/64	389	33.7	85.5	2.1	37.2	55.604	-43.1	13*43*33	18.1					716		
5755	3	112.01	16*40*14	7/12/64	389	33.6	85.5	1.8	37.3	55.592	-55.8	17* 3*33	23.3					716		
5766	2	-159.36	10*31*39	7/13/64	390	32.6	85.6	0.6	37.8	55.526	-55.0	10*43* 3	11.4					717		
5769	3	126.61	15*23*52	7/13/64	390	32.4	85.6	0.3	38.0	55.508	-50.4	15*45*33	21.7					717		
5782	1	165.86	12*30* 6	7/14/64	391	31.2	85.4	-1.1	38.7	55.430	-43.7	13* 0* 3	30.0					718		
5785	2	91.85	17*22*18	7/14/64	391	30.9	85.4	-1.5	38.9	55.412	-54.4	17*57* 3	34.8					718		
5795	2	-154.86	9*36*20	7/15/64	392	29.9	85.2	-2.5	39.5	55.352	-55.3	9*46*33	10.2					719		
5798	3	131.12	14*28*32	7/15/64	392	29.7	85.1	-2.8	39.5	55.334	-51.5	14*51*17	22.8					719		
5810	2	-164.93	9*57*22	7/16/64	393	28.4	84.8	-4.1	40.2	55.263	-56.7	10*11* 3	13.7					720		
5813	3	121.05	14*49*35	7/16/64	393	28.2	84.6	-4.4	40.3	55.245	-20.8	15*11*33	22.0					720		
5824	2	-150.33	8*41* 1	7/17/64	394	27.0	84.3	-5.6	40.9	55.180	-60.1	8*50*33	9.5					721		
5827	3	135.64	13*33*13	7/17/64	394	26.8	84.1	-5.9	41.1	55.163	-52.6	13*53*33	20.3					721		

READOUT										ORBIT					FMR TAPE REEL NO.	
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	E N D		DROPOUTS, MINUTES W/R/T ANO		
		EARTH LONGI TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO	FROM-	TO-	
5839	2	-160.41	9* 2* 3	7/18/64	395	25.5	83.6	-7.2	41.6	55.093	-57.2	9*14* 3	12.0			722
5842	1	125.57	13*54*16	7/18/64	395	25.3	83.5	-7.5	41.8	55.076	-50.2	14*30*33	36.3			722
5855	1	164.84	11* 0*30	7/19/64	396	24.1	82.9	-9.0	42.5	55.002	-45.6	11*30*33	30.1			723
5857	3	115.50	14*15*18	7/19/64	396	23.9	82.8	-9.2	42.5	54.990	-43.2	14*38* 3	22.8			723
5868	2	-155.88	8* 6*44	7/20/64	397	22.8	82.2	-10.5	43.1	54.929	-57.5	8*17*33	10.8			724
5871	3	130.10	12*58*56	7/20/64	397	22.6	82.0	-10.8	43.2	54.913	-29.4	13*19*33	20.6			724
5884	1	169.37	10* 5*10	7/21/64	398	21.4	81.3	-12.3	43.8	54.842	-45.8	10*35* 3	29.9			725
5886	3	120.02	13*19*59	7/21/64	398	21.4	81.3	-12.6	43.9	54.831	-44.8	13*42* 3	22.1			725
5899	1	159.26	10*26*13	7/22/64	399	9.9	79.8	-8.9	46.8	54.743	-35.1	10*57* 3	30.8			726
5901	3	109.92	13*41* 1	7/22/64	399	8.3	79.5	-8.1	47.1	54.732	-42.7	14* 5* 3	24.0			726
5912	2	-161.46	7*32*27	7/23/64	400	-2.2	78.6	-4.5	49.8	54.668	-59.7	7*44*33	12.1			727
5915	3	124.51	12*24*39	7/23/64	400	-4.4	77.9	-3.2	50.3	54.651	-50.5	12*47* 3	22.4			727
5928	3	163.78	9*30*54	7/24/64	401	-4.0	78.3	-5.9	50.9	54.573	-45.7	9*49* 3	18.2			728
5941	2	-156.94	6*37* 8	7/25/64	402	-4.3	79.1	-9.2	51.6	54.495	-58.6	6*48* 3	10.9			729
5944	3	129.04	11*29*20	7/25/64	402	-4.1	79.2	-10.0	51.7	54.476	-50.6	11*51* 3	21.7			729
5958	3	143.64	10*12*58	7/26/64	403	-3.5	79.5	-13.6	52.1	54.391	-54.9	10*34*33	21.6			730
5959	1	118.96	11*50*23	7/26/64	403	-3.4	79.5	-13.9	52.2	54.385	-64.5	12*29* 3	38.7			730
5970	2	-152.41	5*41*48	7/27/64	404	-2.8	79.3	-16.4	52.5	54.317	-61.0	5*51*33	9.8			731
5973	1	133.56	10*34* 1	7/27/64	404	-2.6	79.3	-17.1	52.5	54.299	-52.4	11*11*33	37.5			731
5975	2	84.22	13*48*49	7/27/64	404	-2.4	79.3	-17.7	52.9	54.286	-5.5	14*29* 3	40.2			731
5982	1	-88.47	1*10*38	7/28/64	405	-1.7	79.3	-19.5	52.7	54.243	-86.6	1*21* 3	10.4			732
5985	2	-162.49	6* 2*51	7/28/64	405	-1.4	79.3	-20.3	52.8	54.225	-53.3	6*15*33	12.7			732
5987	1	148.16	9*17*39	7/28/64	405	-1.3	79.4	-20.8	52.8	54.213	-61.7	9*50*33	32.9			732
5989	2	98.81	12*32*27	7/28/64	405	-1.1	79.4	-21.4	52.8	54.201	13.4	13* 6*33	34.1			732
5997	1	-98.55	1*31*40	7/29/64	406	-0.3	79.3	-23.4	53.0	54.152	-79.6	1*44* 3	12.4			733
5999	2	-147.89	4*46*29	7/29/64	406	-0.1	79.4	-24.0	53.0	54.140	-63.0	4*57* 3	10.6			733

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE						FMR TAPE REEL NO.
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	E N D	DROPOUTS, MINUTES W/R/T ANO							
		EARTH LONGITUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI-NA-TION (DEG)	RIGHT ASCEN-SION (DEG)	MINI-MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU-TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU-TES W/R/T ANO	FROM-	TO-					
6003	3	113.41	11*16* 5	7/29/64	406	0.2	79.4	-25.0	53.1	54.116	-3.3	11*39*33	23.5			733				
6004	2	88.74	12*53*29	7/29/64	406	0.3	79.4	-25.3	53.2	54.110	-62.6	13*29*33	36.1			733				
6011	1	-83.95	0*15*19	7/30/64	407	1.0	79.4	-27.1	53.3	54.068	-88.3	0*25* 3	9.7			734				
6014	2	-157.97	5* 7*31	7/30/64	407	1.2	79.4	-27.9	53.4	54.050	-54.1	5*18*33	11.0			734				
6016	1	152.68	8*22*19	7/30/64	407	1.4	79.5	-28.4	53.5	54.038	2.2	8*57* 3	34.7			734				
6018	3	103.34	11*37* 8	7/30/64	407	1.5	79.5	-29.0	53.5	54.026	-40.8	12* 3*33	26.4			734				
6019	2	78.67	13*14*32	7/30/64	407	1.6	79.5	-29.2	53.6	54.020	-59.5	13*52*33	38.0			734				
6026	1	-94.02	0*36*21	7/31/64	408	2.3	79.4	-31.0	53.6	53.979	-87.1	0*48* 3	11.7			735				
6028	2	-143.36	3*51* 9	7/31/64	408	2.5	79.5	-31.5	53.7	53.967	-63.4	4* 3* 3	11.9			735				
6043	2	-153.44	4*12*11	8/ 1/64	409	3.7	79.5	-35.4	54.1	53.882	-53.9	4*22* 3	9.9			736				
6048	2	83.20	12*19*11	8/ 1/64	409	2.8	79.6	-36.5	54.4	53.804	-59.2	12*57* 3	37.9			736				
6055	1	-89.50	23*41* 1	8/ 1/64	409	-2.4	79.2	-34.3	56.2	53.778	-86.1	23*52* 3	11.0			737				
6057	2	-138.84	2*55*50	8/ 2/64	410	-3.6	78.6	-33.5	56.5	53.770	-63.1	3* 4*33	8.7			737				
6060	1	147.14	7*48* 2	8/ 2/64	410	-5.3	77.6	-32.2	56.8	53.758	-56.2	8*20*33	32.5			737				
6062	2	97.79	11* 2*50	8/ 2/64	410	-6.8	77.4	-31.3	57.1	53.750	-41.7	11*36*33	33.7			737				
6070	1	-99.57	0* 2* 4	8/ 3/64	411	-12.6	77.9	-28.9	59.0	53.718	-77.9	0*15* 3	13.0			738				
6072	1	-148.91	3*16*52	8/ 3/64	411	-13.7	77.5	-28.2	59.3	53.710	-60.4	3*29* 3	12.2			738				
6077	1	87.72	11*23*53	8/ 3/64	411	-16.9	77.0	-26.2	60.0	53.688	-29.6	11*59*33	35.7			738				
6087	1	-158.99	3*37*54	8/ 4/64	412	-23.2	78.5	-23.6	62.2	53.645	-52.9	3*49*33	11.7			739				
6089	1	151.66	6*52*42	8/ 4/64	412	-24.2	78.3	-23.0	62.4	53.636	-61.0	7*26*33	33.9			739				
6091	3	102.32	10* 7*31	8/ 4/64	412	-25.6	78.4	-22.3	62.7	53.627	-42.4	10*34* 3	26.5			739				
6092	2	77.65	11*44*55	8/ 4/64	412	-26.3	78.8	-21.9	62.9	53.622	-57.9	12*23*33	38.6			739				
6099	1	-95.04	23* 6*44	8/ 4/64	412	-30.4	81.8	-20.5	64.7	53.590	-84.7	23*17* 3	10.3			740				
6101	1	-144.41	2*21*32	8/ 5/64	413	-31.2	82.0	-20.2	65.0	53.581	-64.3	2*32* 3	10.5			740				
6103	1	166.24	5*36*21	8/ 5/64	413	-32.0	82.1	-19.7	65.1	53.571	-63.0	6* 7* 3	30.7			740				
6113	1	-80.47	21*50*22	8/ 5/64	413	-37.1	87.4	-17.7	67.4	53.524	-94.1	22* 0*33	10.2			741				

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE					FMR TAPE REEL NO.
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	E N D	DROPOUTS, MINUTES W/R/T AND						
		EARTH LONGI -TUOE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NADIR (DEG)	TOT. (MIN. AFTER ANO1)		MINU -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T ANO	FROM-	TO-				
6116	2	-154.49	2*42*35	8/ 6/64	414	-37.9	88.4	-17.5	67.9	53.509	-54.5	2*52*33	10.0				741		
6118	3	156.16	5*57*23	8/ 6/64	414	-38.5	88.7	-17.2	68.2	53.499	-63.8	6*17* 3	19.7				741		
6128	1	-90.54	22*11*24	8/ 6/64	414	-40.8	94.1	-16.2	70.0	53.449	-95.0	22*20*33	9.2				742		
6130	2	-139.89	1*26*13	8/ 7/64	415	-40.8	94.5	-16.5	70.3	53.439	-65.2	1*38* 3	11.8				742		
6133	3	146.09	6*18*25	8/ 7/64	415	-41.0	94.8	-16.5	70.5	53.423	-36.2	6*38* 3	19.6				742		
6144	1	-125.29	0* 9*53	8/ 8/64	416	-45.6	107.8	-12.4	73.7	53.366	-72.3	0*25*33	15.7				743		
6147	3	160.69	5* 2* 3	8/ 8/64	416	-45.3	109.0	-12.7	74.1	53.350	-47.5	5*22* 3	20.0				743		
6159	2	-135.36	.0*30*53	8/ 9/64	417	-42.1	119.3	-13.7	76.9	53.285	-34.2	0*40* 3	9.2				744		
6162	3	150.62	5*23* 5	8/ 9/64	417	-41.2	120.1	-14.3	77.3	53.269	-12.7	5*42* 3	19.0				744		
6174	2	-145.43	0*51*55	8/10/64	418	-35.2	127.3	-16.4	80.1	53.202	-70.0	1* 0*33	8.6				745		
6203	2	-140.91	23*56*35	8/11/64	419	-17.1	133.2	-24.5	85.9	53.036	-60.4	0* 6* 3	9.5				746		
6208	2	95.70	8* 3*36	8/12/64	420	-14.8	132.7	-26.1	86.5	53.007	-31.4	8*38* 3	34.5				746		
6218	2	-151.00	0*17*38	8/13/64	421	-8.4	133.3	-28.7	88.7	52.948	-68.7	0*29* 3	11.4				747		
6223	2	85.63	8*24*38	8/13/64	421	-8.4	133.1	-27.9	88.9	52.918	-29.4	9* 1* 3	36.4				747		
6233	2	-161.08	0*38*40	8/14/64	422	-8.2	132.8	-26.4	89.3	52.858	-57.2	0*51*33	12.9				748		
6238	2	75.56	8*45*41	8/14/64	422	-8.2	132.6	-25.7	89.6	52.828	-27.8	9*24*33	38.9				748		
6245	1	-97.14	20* 7*30	8/14/64	422	-8.0	132.4	-24.6	89.9	52.786	-10.0	20*20* 3	12.6				749		
6247	2	-146.48	23*22*18	8/14/64	422	-7.9	132.3	-24.3	90.0	52.774	-62.1	23*31*33	9.3				749		
6252	2	90.16	7*29*19	8/15/64	423	-7.9	132.1	-23.5	90.3	52.744	-30.6	8* 5* 3	35.7				750		
6259	1	-82.54	18*51* 8	8/15/64	423	-7.6	132.0	-22.4	90.6	52.701	-88.2	18*59*33	8.4				750		
6262	2	-156.55	23*43*20	8/15/64	423	-7.6	131.9	-22.0	90.8	52.683	-54.3	23*54*33	11.2				750		
6265	1	129.42	4*35*33	8/16/64	424	-7.5	131.7	-21.5	90.8	52.665	-50.7	5*11* 3	35.5				750		
6267	2	80.08	7*50*21	8/16/64	424	-7.4	131.7	-21.2	90.9	52.652	-38.7	8*28* 3	37.7				750		
6278	1	168.70	1*41*47	8/17/64	425	-6.8	131.1	-19.8	91.5	52.554	-39.9	2*12*33	30.8				751		
6281	2	94.68	6*33*59	8/17/64	425	-6.7	131.0	-19.4	91.6	52.536	-33.2	7* 8*33	34.6				751		
6289	1	-102.68	19*33*12	8/17/64	425	-6.1	130.7	-18.3	92.1	52.487	-78.4	19*46*33	13.4				752		

READOUT								ORBIT					TIME INTERVAL OF FILE ON FMR TAPE					FMR TAPE REEL NO.
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	E	N	D	DROPOUTS, MINUTES W/R/T ANO		FMR TAPE REEL NO.	
		EARTH LONGI- TUDUE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI- -NA -TION (DEG)	RIGHT ASCEN- -SION (DEG)	MINI- -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU- -TES W/R/T ANO	HOURLS MINUTES SECONDS (GMT)	MINU- -TES W/R/T ANO	FROM-	TO-			
6291	2	-152.03	22*48* 1	8/17/64	425	-6.0	130.5	-18.1	92.2	52.475	-61.4	22*58* 3	10.0				752	
6296	2	84.61	6*55* 1	8/18/64	426	-5.5	130.2	-17.7	92.4	52.445	-29.5	7*31*33	36.5				752	
6303	1	-88.09	18*16*50	8/18/64	426	-4.3	130.0	-17.0	92.9	52.404	-87.0	18*27* 3	10.7				753	
6306	2	-162.10	23* 9* 3	8/18/64	426	-3.9	129.7	-16.9	93.1	52.387	-52.1	23*22*33	13.5				753	
6310	2	99.19	5*38*39	8/19/64	427	-3.4	129.4	-16.6	93.3	52.364	-37.9	6*13* 3	34.4				753	
6320	2	-147.51	21*52*41	8/19/64	427	-1.7	128.9	-15.8	94.0	52.307	-56.7	22* 4* 3	11.4				754	
6323	1	138.46	2*44*53	8/20/64	428	-1.3	128.6	-15.7	94.2	52.290	-50.2	3*19* 3	34.2				754	
6335	2	-157.59	22*13*43	8/20/64	428	0.7	128.0	-14.7	95.1	52.223	-56.1	22*27* 3	13.3				755	
6338	3	128.39	3* 5*55	8/21/64	429	1.1	127.7	-14.5	95.3	52.206	-50.5	3*28*33	22.6				755	
6340	2	79.04	6*20*44	8/21/64	429	1.4	127.6	-14.4	95.4	52.195	-52.2	6*58*33	37.8				755	
6347	1	-93.65	17*42*33	8/21/64	429	2.7	127.3	-13.7	95.8	52.157	-86.9	17*53* 3	10.5				756	
6351	1	167.66	0*12* 9	8/22/64	430	3.3	126.9	-13.5	96.1	52.135	-40.9	0*43*33	31.4				756	
6366	3	157.58	0*33*11	8/23/64	431	5.8	126.0	-12.4	97.2	52.052	-51.1	0*52*33	19.4				757	
6368	3	108.24	3*48* 0	8/23/64	431	6.1	125.9	-12.3	97.3	52.041	18.4	4*12* 3	24.1				757	
6377	1	-113.79	18*24*37	8/23/64	431	7.9	125.5	-11.7	0.5	51.992	-76.7	18*38* 3	13.4				758	
6381	3	147.51	0*54*14	8/24/64	432	8.5	125.1	-11.5	0.8	51.969	-37.5	1*14*33	20.3				758	
6383	3	98.17	4* 9* 2	8/24/64	432	8.8	125.0	-11.4	0.9	51.958	-53.2	4*34*33	25.5				758	
6392	1	-123.86	18*45*39	8/24/64	432	10.6	124.6	-10.6	1.5	51.908	-75.7	19* 1* 3	15.4				759	
6395	1	162.11	23*37*52	8/24/64	432	11.0	124.3	-10.5	1.7	51.891	3.5	0* 8*33	30.7				759	
6397	3	112.77	2*52*40	8/25/64	433	11.3	124.1	-10.3	1.8	51.879	-43.3	3*16*33	23.9				759	
6406	1	-109.27	17*29*17	8/25/64	433	13.1	123.8	-9.6	2.5	51.828	-77.9	17*41*33	12.3				760	
6409	3	176.71	22*21*30	8/25/64	433	13.6	123.6	-9.4	2.7	51.810	-49.4	22*39*33	18.1				760	
6410	1	152.04	23*58*54	8/25/64	433	13.7	123.5	-9.4	2.8	51.804	-65.8	0*34*33	35.7				760	
6411	3	127.37	1*36*18	8/26/64	434	13.9	123.4	-9.3	2.8	51.799	-52.9	1*59*33	23.3				760	
6421	1	-119.35	17*50*20	8/26/64	434	15.9	123.1	-8.5	3.6	51.739	-72.8	18* 3*33	13.2				761	
6424	3	166.62	22*42*32	8/26/64	434	16.4	122.8	-8.3	3.8	51.721	-39.1	23* 2*33	20.0				761	

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE						FMR TAPE REEL NO.
ORBIT NO.	COA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (AND)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN		E N D		DROPOUTS, MINUTES W/R/T AND		FMR TAPE REEL NO.			
		EARTH LONGI TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECL I -NA -TION (DEG)	RIGHT ASCEN -SION (DEG)	MINI -MUM NADIR (DEG)	TOT (MIN. AFTER AND)		MINU -TES W/R/T AND	HOURS MINUTES SECONDS (GMT)	MINU -TES W/R/T AND	FROM-	TO-					
6426	3	117.28	1*57*20	8/27/64	435	16.3	122.8	-8.2	3.9	51.709	-61.9	2*20*33	23.2			761				
6434	1	-80.08	14*56*33	8/27/64	435	13.2	122.7	-5.0	3.5	51.660	-4.1	15* 5*33	9.0			762				
6436	1	-129.42	18*11*22	8/27/64	435	12.5	122.9	-4.1	3.4	51.648	-7.1	18*28* 3	16.7			762				
6439	1	156.55	23* 3*34	8/27/64	435	11.5	123.2	-2.7	3.3	51.629	-46.1	23*36* 3	32.5			762				
6440	1	131.88	0*40*58	8/28/64	436	11.2	123.3	-2.2	3.3	51.622	-54.0	1*16*33	35.6			762				
6450	1	-114.82	16*55* 0	8/28/64	436	7.3	123.5	2.1	2.8	51.558	-55.5	17* 7*33	12.6			763				
6453	1	171.51	21*47*12	8/28/64	436	6.4	123.9	3.6	2.8	51.538	-50.2	22*17*33	30.4			763				
6454	1	146.48	23*24*36	8/28/64	436	6.1	124.0	4.1	2.8	51.532	-56.0	23*58*33	34.0			763				
6455	1	121.81	1* 2* 0	8/29/64	437	5.8	124.1	4.5	2.7	51.525	-51.7	1*39*33	37.6			763				
6465	1	-124.90	17*16* 2	8/29/64	437	2.1	124.3	8.9	2.3	51.458	-54.0	17*31*33	15.5			764				
6468	1	161.08	22* 8*14	8/29/64	437	1.3	124.8	10.3	2.2	51.437	-47.7	22*39*33	31.3			764				
6478	1	-85.62	14*22*16	8/30/64	438	-2.2	125.2	14.6	1.9	51.366	-67.4	14*33* 3	10.8			765				
6483	1	151.01	22*29*17	8/30/64	438	-3.5	125.9	17.1	1.9	51.329	-41.1	23* 1*33	32.3			765				
6484	1	126.33	0* 6*41	8/31/64	439	-3.7	126.1	17.5	1.9	51.322	-53.2	0*42*33	35.9			765				
6493	1	-95.70	14*43*18	8/31/64	439	-6.7	126.5	21.4	1.6	51.265	-65.7	14*55* 3	11.8			766				
6498	1	140.94	22*50*19	8/31/64	439	-7.9	127.4	23.9	1.6	51.242	-53.2	23*24*33	34.2			766				
6508	1	-105.77	15* 4*20	9/ 1/64	440	-10.9	128.2	28.2	1.4	51.193	-55.9	15*15*33	11.2			767				
6512	1	155.53	21*33*57	9/ 1/64	440	-11.7	129.0	30.2	1.3	51.171	-67.5	22* 5*33	31.6			767				
6522	1	-91.17	13*47*58	9/ 2/64	441	-10.9	129.5	32.7	2.0	51.115	-73.4	13*58* 3	10.1			768				
6523	1	-115.84	15*25*22	9/ 2/64	441	-10.8	129.6	32.8	2.1	51.109	-76.2	15*38*33	13.2			768				
6524	2	-140.52	17* 2*47	9/ 2/64	441	-10.6	129.6	33.0	2.2	51.103	-1.7	17*11*33	8.8			768				
6527	1	145.46	21*54*59	9/ 2/64	441	-10.3	129.6	33.5	2.4	51.085	-59.8	22*28*33	33.6			768				
6537	1	-101.25	14* 9* 0	9/ 3/64	442	-8.9	129.9	35.2	3.3	51.022	-56.6	14*19* 3	10.1			769				
6539	2	-150.59	17*23*48	9/ 3/64	442	-8.7	129.9	35.5	3.4	51.009	-63.3	17*36* 3	12.3			769				
6543	2	110.71	23*53*25	9/ 3/64	442	-8.2	130.0	36.1	3.8	50.984	-42.6	0*26*33	33.1			769				
6553	2	-136.00	16* 7*27	9/ 4/64	443	-6.9	130.4	37.8	4.6	50.918	-64.0	16*17*33	10.1			770				

READOUT										ORBIT				TIME INTERVAL OF FILE ON FMR TAPE						FMR TAPE REEL NO.
ORBIT NO.	CDA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN	E N D		DROPOUTS, MINUTES W/R/T ANO						
		EARTH LONGI- TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI- -NA -TION (DEG)	RIGHT ASCEN- -SION (DEG)	MINI- -MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU- -TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU- -TES W/R/T ANO	FROM-	TO-					
6556	1	149.98	20*59*39	9/ 4/64	443	-6.6	130.4	38.2	4.9	50.898	-18.5	21*34*33	34.9				770			
6557	1	125.31	22*37* 3	9/ 4/64	443	-6.4	130.4	38.4	5.0	50.891	-50.6	23*14* 3	37.0				770			
6558	2	100.63	0*14*27	9/ 5/64	444	-6.3	130.5	38.5	5.1	50.885	-45.3	0*49*33	35.1				770			
6568	2	-146.07	16*28*29	9/ 5/64	444	-3.6	130.0	39.2	6.2	50.818	-69.9	16*38* 3	9.6				771			
6571	1	139.90	21*20*41	9/ 5/64	444	-1.5	128.9	37.6	6.7	50.798	-57.5	21*54*33	33.9				771			
6583	2	-156.16	16*49*31	9/ 6/64	445	8.6	128.8	32.7	9.8	50.720	-79.9	17* 0*33	11.0				772			
6586	1	129.82	21*41*43	9/ 6/64	445	10.7	128.2	31.3	10.3	50.701	-53.6	22*17*33	35.8				772			
6600	1	144.42	20*25*21	9/ 7/64	446	21.1	130.1	26.5	13.5	50.616	-59.3	20*59*33	34.2				773			
6602	2	95.07	23*40*10	9/ 7/64	446	22.8	130.5	25.6	13.9	50.605	-32.1	0*16* 3	35.9				773			
6614	1	159.01	19* 8*59	9/ 8/64	447	29.9	135.0	22.7	16.9	50.540	-41.6	19*42* 3	33.1				774			
6617	2	84.99	0* 1*12	9/ 9/64	448	31.9	136.2	21.6	17.4	50.524	-29.2	0*41* 3	39.9				774			
6626	2	-137.04	14*37*49	9/ 9/64	448	35.7	142.5	20.4	19.9	50.482	-69.8	14*46* 3	8.2				775			
6629	1	148.94	19*30* 1	9/ 9/64	448	36.6	143.3	20.0	20.3	50.470	-51.8	20* 6* 3	36.0				775			
6641	2	-147.11	14*58*51	9/10/64	449	39.1	153.3	19.0	23.3	50.401	-64.5	15* 9* 3	10.2				776			
6644	1	138.86	19*51* 3	9/10/64	449	39.4	154.5	18.9	23.7	50.387	-51.2	20*25* 3	34.0				776			
6646	2	89.52	23* 5*52	9/10/64	449	39.9	156.2	18.5	24.1	50.378	-40.1	23*45*33	39.7				776			
6654	1	-107.84	12* 5* 5	9/11/64	450	38.6	164.2	18.8	26.4	50.340	-30.4	12*20* 3	15.0				777			
6656	2	-157.18	15*19*53	9/11/64	450	38.0	165.0	19.2	26.8	50.331	-58.8	15*31*33	11.7				777			
6661	2	79.45	23*26*54	9/11/64	450	37.5	168.0	19.2	27.7	50.307	-43.7	0* 6*33	39.7				777			
6668	1	-93.24	10*48*43	9/12/64	451	34.1	173.9	20.1	29.7	50.273	-0.6	11* 0* 3	11.3				778			
6670	2	-142.58	14* 3*31	9/12/64	451	33.1	174.4	20.8	30.2	50.264	-63.5	14*11*33	8.0				778			
6675	2	94.05	22*10*32	9/12/64	451	31.4	176.2	21.6	31.0	50.239	-46.2	22*45*33	35.0				778			
6683	1	-103.32	11* 9*45	9/13/64	452	25.9	180.8	23.2	33.2	50.199	-50.9	11*22* 3	12.3				779			
6685	2	-152.66	14*24*33	9/13/64	452	24.6	180.8	24.1	33.6	50.189	-63.0	14*36* 3	11.5				779			
6700	2	-162.73	14*45*35	9/14/64	453	22.7	181.4	24.0	35.0	50.109	-52.9	14*59*33	14.0				780			
6704	2	98.57	21*15*12	9/14/64	453	22.6	181.6	23.4	35.3	50.086	-38.6	21*49* 3	33.9				780			

READOUT								ORBIT					TIME INTERVAL OF FILE ON FMR TAPE					FMR TAPE REEL NO.
ORBIT NO.	COA STA	SATELLITE EQUATOR CROSSING AT ORBITAL ASCENDING NODE (ANO)				SPIN VECTOR ATTITUDE				SPIN RATE (DEG /SEC)	BEGIN		E N D		DROPOUTS, MINUTES W/R/T ANO		FMR TAPE REEL NO.	
		EARTH LONGI- TUDE (DEG)	HOURS MINUTES SECONDS (GMT)	CALENDAR DATE	TIROS DAY	DECLI- NA- TION (DEG)	RIGHT ASCEN- SION (DEG)	MINI- MUM NADIR (DEG)	TOT (MIN. AFTER ANO)		MINU- TES W/R/T ANO	MINU- TES W/R/T ANO	HOURS MINUTES SECONDS (GMT)	MINU- TES W/R/T ANO	FROM-	TO-		
6717	3	137.82	18*21*26	9/15/64	454	23.1	181.9	20.9	36.0	50.010	-69.9	18*43*33	22.1			781		
6719	2	88.48	21*36*14	9/15/64	454	23.2	181.9	20.6	36.1	49.998	-51.5	22*12* 3	35.8			781		
6729	2	-158.23	13*50*15	9/16/64	455	23.7	182.0	18.7	36.5	49.935	-61.5	14* 2* 3	11.8			782		
6732	3	127.75	18*42*28	9/16/64	455	23.7	182.1	18.1	36.6	49.915	-51.7	19* 6* 3	23.6			782		
6734	2	78.41	21*57*16	9/16/64	455	23.8	182.0	17.8	36.7	49.906	-50.7	22*35*33	38.3			782		
6741	1	-94.28	9*19* 5	9/17/64	456	24.2	182.0	16.4	37.0	49.871	-86.8	9*29* 3	10.0			783		
6746	3	142.35	17*26* 5	9/17/64	456	24.4	182.1	15.4	37.2	49.848	-60.7	17*48* 3	22.0			783		
6748	2	93.01	20*40*54	9/17/64	456	24.5	182.1	15.0	37.3	49.840	-51.0	21*15*13	34.3			783		
6758	2	-153.70	12*54*53	9/18/64	457	25.2	181.9	13.0	37.6	49.799	-60.1	13* 5*33	10.7			784		
6761	3	132.28	17*47* 5	9/18/64	457	25.4	182.0	12.4	37.7	49.787	-51.2	18* 8* 3	21.0			784		
6763	2	82.93	21* 1*53	9/18/64	457	25.5	181.9	12.0	37.8	49.780	-52.4	21*39* 3	37.2			784		
6773	2	-163.78	13*15*55	9/19/64	458	26.3	181.8	9.9	38.1	49.741	-58.4	13*29*33	13.6			785		
6775	3	146.87	16*30*43	9/19/64	458	26.4	181.8	9.5	38.1	49.733	-61.1	16*50*33	19.9			785		
6777	2	97.53	19*45*32	9/19/64	458	26.5	181.8	9.0	38.2	49.725	17.2	20*20* 3	34.5			785		
6787	2	-149.17	11*59*33	9/20/64	459	27.4	181.5	6.9	38.3	49.681	-68.7	12*11*33	12.0			786		
6792	2	87.46	20* 6*34	9/20/64	459	27.8	181.5	5.9	38.5	49.656	-54.4	20*42* 3	35.5			786		
6804	1	151.40	15*35*24	9/21/64	460	29.2	181.6	2.9	38.6	49.587	-65.6	16* 7* 3	31.7			787		
6806	2	102.05	18*50*12	9/21/64	460	29.4	181.5	2.4	38.7	49.574	8.9	19*24*33	34.4			787		
6878	1	125.73	15*43*11	9/26/64	465	32.7	181.5	-12.4	40.3	65.841	-48.0	16*19*28	36.3			788		

APPENDIX B

SUBPOINT TRACK SUMMARY OF AVAILABLE RADIATION DATA

In this section, the time interval for which radiation data are available on the FMR Tapes for TIROS VII from March 1, 1964 to September 30, 1964 is summarized dia-grammatically by means of subpoint tracks for each interrogation day. As discussed previously, an interrogation day may be contained within the calendar day, or it may consist of two calendar days. This method of presentation enables the data user to quickly appraise the orbits containing data in an area of interest. Additional information illustrating the use of the Subpoint Track Summaries is explained in Appendix B, Volume 1.

